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WESTERN AMERICANA

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OREGON:

ITS

RESOURCES, CLIMATE, PEOPLE, AND PRODUCTIONS.

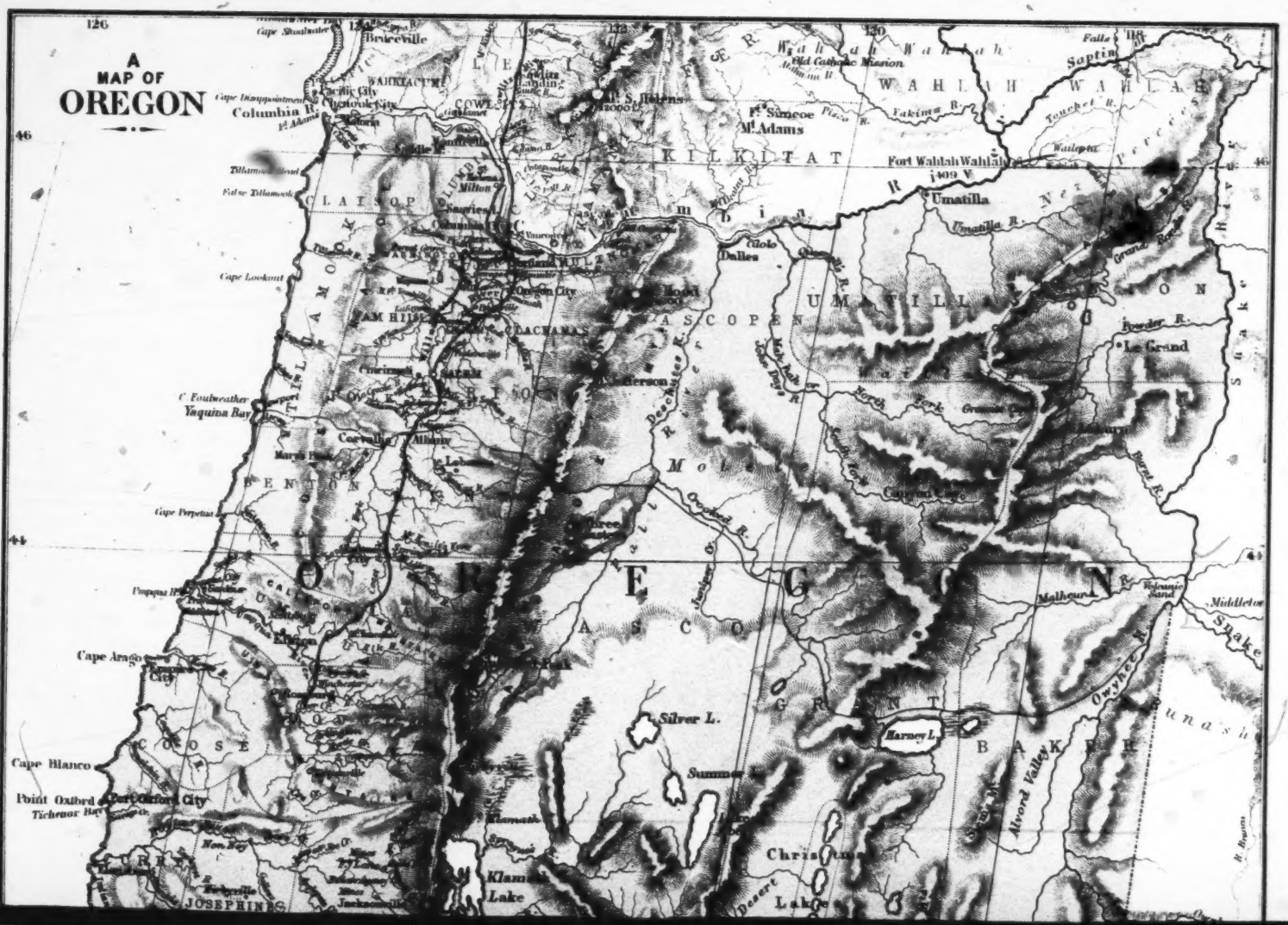
BY

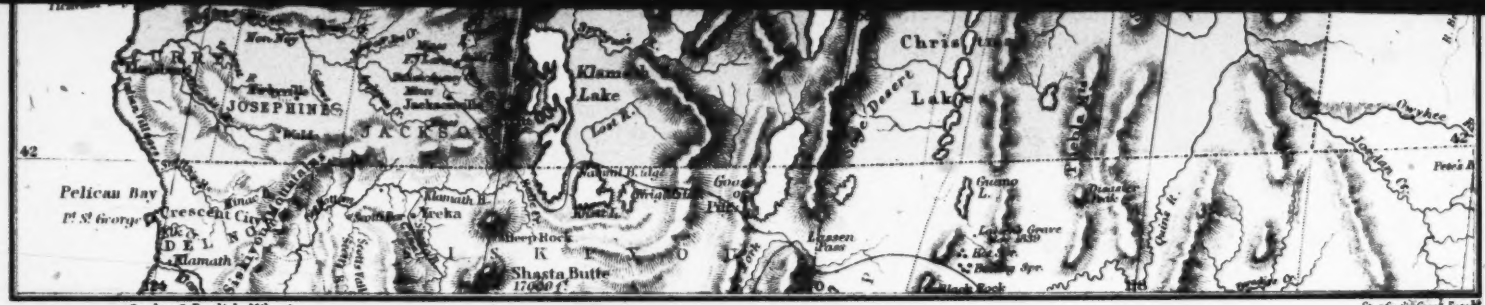
H. N. MOSELEY, F.R.S.

LONDON:

EDWARD STANFORD, 55, CHARING CROSS, S.W.

1878.


A
MAP OF
OREGON
Cape Shoalwater
Bruceville
Cape Disappointment
Columbia R.
Pt Adams
Pacific City
Astoria City
WAHKIACUM
COWLITZ
Mt. S. Helens
Pt Simcoe
Mt Adams
Fort Wahlah Wahlah
Umatilla
Falls
Saptin
Old Catholic Mission
Yakima R.
Touchet R.
Walla Walla R.
WAHLAH WAHLAH
KILKITAT
CLATSOP
Milton
Tillamook Head
Cape Lookout
Oregon City
Champoeg
Dalles
Tilolo
UMATILLA
WASCOPEN
Grande Ronde R.
Snake R.
Le Grand
Powder R.
Deschutes R.
Metchel Johns Pass
North Fork
Canyon Creek
Grassy Creek
Forks R.
TILLAMOOK
YAM HILL
LINN
BENTON
C. Foulweather
Yaquina Bay
Corvallis
Albany
Marys Peak
Cape Perpetua
Umpqua R.
Calapooya Mts
Cape Arago
Coos Bay
COOS
Cape Blanco
Port Orford
Point Orford
Tichenor Bay
Rogue R.
JOSEPHINE
Klamath Lake
Silver L.
Summer L.
Harney L.
Malheur R.
Malheur
Volcanic Island
Middleton
Snake R.
Owyhee R.
Alvord Valley
Christmas Lake
Desert
BAKER
GRANT
Humboldt R.
Humboldt Mts
Sierra Nevada Mts
Cascade Mts
Blue Mts
Wallowa Mts
Wallowa R.
Grande Ronde R.
Powder R.
Burnt R.
Owyhee R.
Malheur R.
Snake R.
Deschutes R.
Columbia R.
Willamette R.
Umpqua R.
Rogue R.
Klamath R.
Pit R.
Sacramento R.
Trinity R.
Eel R.
Mad R.
Redwood Creek
Humboldt Bay
Eureka
Arcata
Trinidad
Crescent City
Smith R.
Klamath Mts
Scott R.
Shasta R.
Shasta Mt
Mt Pitt
Mt Jefferson
Mt Hood
Mt Rainier
Mt Adams
Mt St Helens
Mt Baker
Fraser R.
Thompson R.
Kamloops
Okanagan R.
Okanagan Lake
Kettle R.
Pend Oreille R.
Pend Oreille Lake
Clark Fork R.
Flathead R.
Flathead Lake
Kootenay R.
Kootenay Lake
Kootenay Pass
Columbia Lake
Columbia Mts
Rocky Mts
Saskatchewan R.
Bow R.
Bow Pass
Athabasca R.
Athabasca Pass
Athabasca Lake
Peace R.
Peace River
Peace River Pass
Finlay R.
Finlay Branch
Parsnip R.
Parsnip Branch
Fraser Lake
Stuart Lake
Stuart R.
Nechacco R.
Nechacco Lake
Nechacco Valley
Nechacco Mts
Nechacco Pass
Nechacco Plains
Nechacco Creek



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OREGON:

ITS RESOURCES, CLIMATE, PEOPLE, AND PRODUCTIONS.

In the months of July and August of the past year, 1877, I accompanied, at the invitation of Mr. Wallis Nash, of 12, Queen Street, London, a party which paid a somewhat hurried visit to the State of Oregon; and I now, at the request of Mr. Nash, give here in the following report a short account of the aspects, climate, resources, and condition of the people of the State, which account is to a large extent extracted from official documents, but also supplemented by observations made by myself during the tour above referred to.

I extract from the official publications, because, from the numerous opportunities which I have had of testing the statements contained in them, I believe them to be thoroughly trustworthy; and as they have been prepared with great care, they seem to me to give as complete and satisfactory an account of the country and its resources, from the point of view required by the emigrant or capitalist, as can be condensed within the limits of a pamphlet.

The account of the State to which I specially refer is a pamphlet entitled 'Oregon: facts regarding its climate, soil, mineral and agricultural resources, means of communication, commerce and industry, laws, &c., &c., for

general information.' The pamphlet is published by the Oregon State Board of Navigation, at the Eastern Office at Washington Street, Boston, Mass., and bears date 1877. From this pamphlet copious extracts have been made, as also from various official reports of the U.S. Government.

Oregon is the most north-westerly State in the Union, Washington Territory, which bounds it on the north, not having as yet been able to constitute itself a State. It lies between 42° and 46° of northern latitude, or at about the same distance from the equator as the south of France and north of Spain. It is bounded on the east by Idaho, on the west by the Pacific Ocean, on the north by the Columbia River, and on the south by California and Nevada. It extends on an average for 350 miles east and west, and for 275 miles north and south, and contains 95,274 square miles, that is to say, it has an area exceeding that of England, Wales, and Scotland by about 5500 square miles.

The Cascade Mountains, a continuation of the range known in California as the Sierra Nevada, stretch across the State from north to south at a distance of about 110 miles from the Pacific, having an average elevation apparently of about 7000 feet, with passes of only 4500 feet above sea level. A series of mostly isolated volcanic peaks scattered along the range rise snow-capped above the general mountain mass; such are the Three Sisters, Mount Hood (11,025 feet), Mount Jefferson, Mount Pitt, &c. These fine peaks, towering far above the main range, and being covered with snow and glaciers, render the Cascade Mountains far more striking and beautiful in scenic effect than the Sierra Nevada of California. The Cascade Range divides Oregon into two distinct sections, known as Eastern and Western Oregon. Of these the former contains by far the most territory, but the latter is far more advanced in

civilization, and within its natural boundaries, that is, between the Cascade Mountains and the Pacific coast, well-nigh nine-tenths of the present population are living.

In Western Oregon, another range of mountains, the "Coast Range," extends along the Pacific coast, and varies in distance from the Cascade Range from 40 to 70 miles. Its average height is said to be 2500 feet above sea level, and its highest points not more than 5000 feet. Where traversed by us at the head waters of the Yaquina River the general elevation of the mountains was less, although Mary's Peak, close by, was ascertained to have an altitude of about 4000 feet. The easy passes over the range are only about 700 feet above the sea level.

Eastern Oregon is subdivided, so to speak, into Middle Oregon and Eastern Oregon proper, by the Blue Mountains, a range with a general north and south direction situate at a distance of about 150 miles east of the Cascade Mountains. Whilst in Western Oregon the general extent of the flat country, consisting principally of the broad valley of the Willamette, is only elevated 60 or 100 feet above sea level, the extensive plains composing Middle Oregon are a tableland, and were found at Prineville or Ochico to be elevated 2800 feet above sea level.

RIVERS.

The Columbia River is the most important on the Pacific slope of the American continent. It rises in a small lake among the western declivities of the Rocky Mountains, 576 miles in a direct line from its mouth, and flows in a devious course 1360 miles to the Pacific, forming a great portion of the dividing line between Oregon and Washington territory on the north. It has a basin with an area of 194,400 square miles. Its first wanderings are northward along the base of its great hill ranges, and

afterwards it shapes its course due west to the sea, though very capriciously. It is a rapid river, pushing its way through mighty mountain passes and in many a cataract of marvellous beauty. In its course through the Cascade Ranges it falls into a series of charming rapids, which may be numbered amongst the chief natural attractions of the country. The tide sets up to this point 140 miles. For 30 or 40 miles from its mouth the Columbia spreads out into a chain of bay-like expansion, from four to seven miles or more in width. Its average width is less than a mile. The shores are lined with grand mountain heights, making the landscape everywhere extremely interesting and impressive.

Vessels of 200 to 300 tons burden may ascend to the foot of the Cascades. Above this point the river is navigable for small vessels only, and but at intervals on its course.

The Willamette, the largest tributary of the Columbia, lies with all its affluents, the Santiam, Luckiamute, Mary, &c., entirely within Western Oregon. The river flows from the foot of the Cascade Range 200 miles, first north-west and then north, to join the Columbia, 8 miles below Fort Vancouver. Its way is through the beautiful valley lands which bear its name, and upon its banks are Oregon city, Portland, Corvallis, Eugene city, and other thriving places. Ocean steamers ascend 15 miles to Portland. Ten miles above this point a series of fine falls occurs in the passage of the river, above which the waters are again navigable perhaps 60 miles for small steamboats.

The valley of the Willamette is a most fertile region. It is 50 miles by 100 miles in extent, and supports by its agricultural products nearly one-half the entire population of the State; and it is to the great fertility of the basin of this river that the prosperity and present advancement of Oregon are due.

Other smaller rivers, such as the Rogue, Umpqua,

Siletzo, Yaquina, and others, furrowing the Coast Ranges, and with varying amounts of flat or bottom land in their valleys, drain into the Pacific Ocean directly.

In Middle Oregon the principal rivers are the Des Chutes, John Day, and Umatilla Rivers; and in Eastern Oregon, the Snake River. All of these join the Columbia. There are numerous lakes in South-eastern Oregon, the principal of which are Klamath, Goose, and Warner Lakes, and Lake Harney.

I travelled the entire length of Western Oregon from south to north by coach and railway, so as only to obtain a hurried glance at the country passed by, but a journey taken from west to east across the centre of Western and Middle Oregon, extending from Yaquina Bay to Ochico or Prineville on Crooked River east of the Cascades, was more deliberate, and on the whole I have had a fair opportunity to judge of the prospects and present condition of the country, excepting in the case of Eastern Oregon proper, of which I have seen nothing, but judge only from published accounts and by the reports of a few cattle owners whom I met with in Middle Oregon.

HISTORICAL SKETCH.

The discovery of Oregon is an honour disputed by the British and Spanish nations, for the coast was visited by navigators from both countries in the sixteenth century. Ferello, the pilot of Cabrillo, a Spaniard, is said to have reached as far N. as lat. 43°, in 1547, while in 1579 Drake arrived at the forty-eighth parallel. In 1778 Cook sailed along Oregon. Heceta, in 1775, and Vancouver, early in 1792, suspected the existence of an important river from the general appearance of the bay into which the Columbia empties itself.

The estuary of the Columbia River was first entered in 1792, by Captain Baker, an Englishman, and by Captain Gray, of Boston, commanding the ship 'Columbia,' from which vessel the present name of the river is derived. On account of the priority of the entrance of the latter explorer, the American Government laid claim to the entire country watered by the river and its affluents; but the river was actually ascended for the first time by Lieut. Broughton, R.N., who, a few months after Captain Gray had entered its mouth, went up it for above 100 miles, and formally took possession of the country in the name of his sovereign, George III. In 1804 an expedition was sent out by the United States, commanded by Captain Lewis and Clark, who crossed the Rocky Mountains and descended the Columbia to the Pacific, passing the winter of 1805–6 at the mouth of the river. From that period the coast became the resort of English and American fur traders, and the official report of these

explorers first made the great resources of that part of the Pacific coast generally known.

In 1810 the first house was built in Oregon by Captain Winship, another New-England seafarer. In 1811, John Jacob Astor, of New York, established a trading-post at the mouth of the Columbia River, which was named "Astoria" in his honour. The venture proved disastrous, mainly in consequence of the war between the United States and Great Britain in 1812. The British took possession of the post in 1813 and called it Fort George. Subsequently it became the property of the Hudson Bay Company, and remained in its possession until 1848.

The North-west Fur Company disputed for a time the rule of the latter Company on the Pacific coast, but had to succumb in a few years, and was absorbed by its rival in 1824; from which time till 1848 the latter ruled supreme in the valleys of the Columbia and Willamette.

In 1824, the first fruit-trees were planted in Oregon, and in 1831 the first regular attempts at farming made by some of the retired servants of the Hudson Bay Company. In 1832, the first school was opened. Between 1834 and 1837, missionaries of various denominations arrived, bringing the first cattle with them. In 1838, the first printing-press arrived in Oregon. In 1841, Commodore Wilkes visited the Columbia on an exploring expedition, at the instance of the American Government.

The sovereignty of Oregon was in 1789-90 a matter of grave dispute between the Governments of England and Spain, but the question was terminated in 1790 by the Convention of Madrid, by which the right of exclusive possession was relinquished by both countries. The Americans subsequently formed a trading settlement at Astoria, which, during the war in 1814, was taken possession of by the English, but given up at the close of

the war. After the treaty with Spain in 1819, the U.S. Government first set up a claim, founded on the right of discovery, and also on their having by the treaty succeeded to the Spanish right of occupancy; to the exclusive possession of Oregon.

From 1816 to 1846, the American and British Governments held Oregon by "joint occupancy" under a formal treaty. Yet up to 1843 the inhabitants of Oregon did not enjoy the benefit of any form of civil government whatever, but, in the year last named the first steps were taken towards the organization of a provisional government, which was formally accepted by the people at a general election held in 1845.

In 1843 and the following years, a considerable immigration of Americans took place, mainly from the border slave States, so that in 1846 the entire white population numbered about 10,000. In 1846 the first newspaper was started. In the same year, Oregon was formally added to the United States by treaty with Great Britain. In 1847 a massacre of settlers by the Indians occurred, which was the beginning of much trouble with the aborigines.

In 1848 Oregon was organized by Congress as a Territory. In 1849 Joseph Lane entered upon office as the first Territorial Governor.

In 1850, Congress, in order to encourage immigration to Oregon, passed the "Donation Law," under which all who had emigrated or would emigrate to Oregon before Dec. 1, 1850, received liberal grants of public lands. A married couple received 640, single men 320 acres. After the date named, the grant was limited to half the quantity. This action of the Government greatly helped the settlement and development of the country.

Oregon received some of the tide of immigration attracted to the Pacific coast by the discovery of gold in 1848–1849; but the gold fever also drew away a good many of its inhabitants to California. Those that remained in the

State had no reasons to regret it, for in those years all kinds of agricultural products brought fabulous prices at the Californian mines.

The progress of Oregon was very much retarded by the troubles with the Indians in 1855, 1858, and subsequent years. Lasting peace was only restored within the last few years by the removal of the Indians to reservations.

In 1859, Oregon was admitted into the Union as a sovereign State, with a population at the time of 52,465 souls.

The Territory of Idaho being organized in 1863, included hitherto a certain tract of land which had formed part of North-eastern Oregon.

The difficulty of marketing the abundant agricultural products proved a serious impediment to the material progress of Oregon, and the growth of the State was but slow until 1869, when the construction of railroads commenced. Two hundred and fifty miles of railway have been built up to this time, and further roads are now in progress.

With the advent of railroads every material interest in Oregon received a new impetus, and the prosperity of the State has greatly increased since. According to the census of 1870 the population of Oregon was 90,923, and the State census 1875, 100,000, exclusive of 2000 new settlers arriving too late in the year for enumeration.

CLIMATE.

The climate of Western Oregon is mild and equable, being tempered by the close proximity of the ocean, and by the presence of the offset of the North Pacific drift current, known as the Californian current, all along its shores, and is thus never very hot in summer nor very cold in winter, and in this respect contrasts most favourably with the States lying east of it in the same latitude.

The mean average temperature of the four seasons a

Portland, Oregon, as appears from the official observations taken at the U.S. Signal Station, are: spring, 51° 9′ Fahr.; summer, 65° 3′; autumn, 52° 8′; winter, 40° 1′; showing a difference of extremes of 25° 2′. As against these results the winter mean in Davenport, Iowa, is 19° 9′, and the summer 75° 2′, showing a difference of extremes of 55° 3′ Fahr. A careful record has been taken at Eola, a point three miles west of Salem, the capital of Oregon, since 1870, which gives an average mean temperature for seven years at this point of spring, 48° 3′; summer, 63° 7′; autumn, 51° 2′; winter, 38° 2′; with a difference between extremes of 25° 5′. Official observations were formerly taken at Corvallis as long as there was a U.S. military post there. They gave an average result of spring, 32°; summer, 67°; autumn, 53°; with a difference between extremes of 26°.

The highest and lowest temperatures in each month and monthly range at Portland, Oregon, reported by the U.S. Signal Service Station, are given in the following table:—

HIGHEST AND LOWEST TEMPERATUR IN EACH MONTH, AND MONTHLY RANGE, REPORTED BY THE U.S. SIGNAL SERVICE STATION, PORTLAND, OREGON.

	1874.			1875.			1876.		
	Highest.	Lowest.	Range.	Highest.	Lowest.	Range.	Highest.	Lowest.	Range.
January	56	26	30	53	3	50	58	20	38
February	60	31	29	54	24	30	59	32	27
March ..	65	33	32	55	34	21	59	33	26
April ..	77	37	40	83	28	55	67	33	34
May ..	83	43	40	75	40	35	82	36	46
June ..	82	45	37	82	39	43	99	45	54
July ..	88	49	39	95·5	46	49·5	90	49	41
August..	84	46	38	88	46	42	84	43	51
September	88·5	42	46	86	44	42	90	44	46
October..	77	32	45	78	36	42	79	42	37
November	63	27	36	63	28	35	63	34	29
December	57	31	26	63	33	30	56	24	32

MONTHLY MEAN TEMPERATURE REPORTED BY U.S. SIGNAL SERVICE STATION AT PORTLAND, OREGON.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1872.	41·90	..	..	..	..	..	..	..	..	53·00	41·60	41·09
1873.	44·40	40·60	48·01	51·30	55·90	61·50	63·00	67·70	61·90	49·90	47·40	37·00
1874.	42·90	43·70	45·10	53·90	59·70	60·20	68·30	64·70	61·90	56·10	45·30	42·60
1875.	30·30	40·50	44·10	56·20	56·10	62·20	71·80	67·70	63·80	58·10	44·60	47·80
1876.	38·97	45·16	44·89	50·45	55·47	65·13	66·51	64·10	62·93	57·80	45·79	40·23

The temperature rarely falls below 20° in winter, and seldom rises above 90° in the hottest days of summer. During our tour in the country, although constantly out in the open air and taking exercise, we did not suffer in any material way from the heat during the day; and although the sky was usually remarkably clear and the radiant heat very powerful, it only burned our faces and hands without excessively heating the air. Sunstroke is said to be almost or quite unknown in Oregon. One of the strongest features in favour of the climate is that the nights are always cool and pleasant, so that a good sleep is always to be obtained; nevertheless they are not so cool as to render sleeping in summer on the bare ground out in the open with no other covering but that of a couple of blankets at all unpleasant. Our party slept in this way during nearly all the tour of inspection undertaken.

In Eastern Oregon, owing to the greater elevation above the sea and the much smaller amount of moisture in the air, the extremes of temperature are greater. At the Dalles the spring mean is given as 53°, the summer as 70° 5′, the autumn 52°, and winter 35° 5′, showing an extreme of 35°. I believe there are no observations available for determining the climate of the more southern part of Eastern Oregon. In the ninth census of the United States, published at Washington, in 1872, vol. ii.

p. 580, a Chart is given prepared by Mr. Charles A. Schott, of the U.S. Coast Survey, in which the course of the isothermal lines of mean annual temperature of the United States are set forth. From this Chart it appears that in Oregon a zone stretching all along the coast, and including all the western area of the Coast Ranges, has a mean temperature of 52° F., and this zone follows the course of the Columbia River inland as far as Walla Walla, having a breadth north and south of the river of nearly 2° of latitude. From Walla Walla this zone of 52° F. turns down south along the Snake River, and ends in a wide expansion around Boise city. The Willamette Valley district is shown as having a mean temperature of from 48° to 50° F., as has also Eastern Oregon generally, with the exception of the Snake River district, already mentioned, and a belt lying just east of the Cascade Range, and under its lee, which has a width of about 120 miles and a temperature of 40° F., rising gradually to 44° F., on the eastern margin of the belt.

The invariable remarks which are to be heard in California concerning Oregon are to the effect that it is always raining there, and the Oregonians are termed "web feet" in derision by their southern neighbours, but in reality the general rainfall of Oregon is by no means excessive. The rainfall varies greatly in different parts of the State, as necessarily results from the action of the ranges of mountains on the cloud-bearing winds blowing over the country from the Pacific. Whilst Western Oregon has abundance of rain, Middle and Eastern Oregon do not receive enough, and especially a tract of country lying under the lee of the Cascade Mountains, is parched for want of water, and in many places actual desert. The rainfall in Western Oregon itself varies a good deal. Thus the mean rainfall at Portland for four years is 52·82 inches, whilst that recorded at Eola,

farther south, is only 37·49. This amount is only half an inch greater than that of England, the mean rainfall of which is 37 inches. As appears from the United States official Rain Chart,* the annual rainfall on the west slope of the Coast Ranges at Yaquina Bay amounts to 68 inches, and rises hence northward to reach 72 inches on the coast near Astoria, at the mouth of the Columbia River. It is given as 60 inches on the summits and eastern slopes of the Coast Ranges in the latitude of Yaquina River, and 52 inches over the northern part of the Willamette Valley. In lat. 45° on the west slope of the Cascade Mountains it is 44 inches, and at Jacksonville 32 inches. On the eastern side of the Cascade Range the rainfall is 20 inches, sinking by a series of zones eastward to 16 and 12 inches. At the Dalles it is 20 inches and at Walla 16. The number of rainy and snowy days occurring annually registered at Eola averages for seven years 117·5; in England there are from 152 to 155 rainy days annually.

RAINY AND SNOWY DAYS AT EOLA, OREGON.

Year.	Rainy Days.	Snowy Days.
1870	105	3
1871	141	10
1872	111	5
1873	95	4
1874	100	7
1875	113	7
1876	118	3

The distribution of the rainfall over the several seasons of the year is shown by the following table of the monthly and annual amount of rainfall at Portland:—

* Ninth U.S. Census, p. 649.

MONTHLY AND ANNUAL AMOUNT OF RAINFALL AT PORTLAND, OREGON, IN INCHES, REPORTED BY U.S. SIGNAL SERVICE STATION.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	For the Year.
1872.	9·47	..	..	..	..	..	..	..	..	1·80	4·67	9·47	..
1873.	8·49	6·58	12·26	2·35	2·18	2·86	1·02	0·84	0·00	3·86	4·33	5·15	50·02
1874.	9·46	4·28	5·15	3·68	2·38	2·68	0·19	0·83	1·70	0·36	10·22	5·24	46·17
1875.	4·49	1·99	9·41	2·10	2·87	2·05	0·02	0·53	0·71	6·73	15·77	13·41	60·08
1876.	4·89	7·50	9·12	5·34	1·88	2·35	0·96	0·56	1·09	10·53	10·03	0·87	55·03

The average number of rainy days which have occurred at Eola in each month of the year during the last seven years is as follows, the number of inches falling in each month being added:—

	Number of Rainy Days.	Number of Snowy Days.	Rainfall in Inches.
January	14·6	1·8	5·1
February	14·4	·6	5·7
March	17·4	·6	6·1
April	11·5	·28	3·1
May	9·5	0	2·0
June	5·	0	1·2
July	1·8	0	·24
August	2·1	0	·14
September ..	3·4	0	·78
October	7·4	0	2·93
November	12·2	·58	5·56
December ..	12·5	1	5·13

It will be seen that the main quantity of the rain falls in winter and spring, March being the most rainy month. The very small average amount of snowy days is a very remarkable fact. The three ripening and harvest months are almost devoid of rain. Occasionally, but very rarely, a heavy rain falls in these months. Thus,

just before our visit, about June 28, 1877, a heavy rain occurred about Corvallis and Philomath, and laid the corn in some places before it was ripe. In the south of Western Oregon in the Umpqua and Rogue River valleys there is sometimes a shortness of grass in the summer and autumn, owing to prolonged drought.*

Severe winters occur at considerable intervals. Thus the winter of 1861–1862 was very heavy; I was told by Mr. Simmonds, a Presbyterian minister who farms land near Corvallis, that 12 inches of snow lay on the ground, and that floods occurred in the Willamette Valley and did much damage. Cattle died for want of fodder. Again, in the winter 1867–1868 a foot of snow lay on the ground for six weeks, and many cattle again perished. A certain amount of hay is always now prepared and kept ready in case of a hard winter occurring, and cattle are thus not lost as in early times, when little precaution was taken. In the month of January, 1875, there was a spell of unusually cold weather, during which the thermometer fell nearly to zero Fahrenheit, and the navigable rivers were obstructed by ice. Now and then late frosts occur as late as the middle of May, and sometimes, but rarely, are severe enough to injure the fruit crop. Unusual variations sometimes occur in the summer climate. Thus in 1870 there were heavy rains in June, succeeded by extraordinarily hot days and nights. The wheat crop, as appears from the returns, was, however, a maximum one in that year.

It is said that in Western Oregon thunderstorms are of very rare occurrence, and that hailstorms, hurricanes, whirlwinds, earthquakes, and other destructive phenomena are entirely unknown. The comparative freedom of this section of the country from high winds is fully shown

* Monthly Reports of the U.S. Department of Agriculture for 1871, p. 130.

by the Government wind records extending over a period of twenty-five years, during which only three winds blew over the State with a velocity of forty-five miles to the hour and a force of 10 lbs. to the square foot.

In the tract of Middle Oregon which fell under my own observation the rainfall must be very scanty indeed, and the only land there which has any considerable value is that which closely bordering on rivers is naturally watered by them, or which can be artificially irrigated from them. The rivers in question have their source of supply in the snows and glaciers of the Cascade Mountains, and hence the land irrigated by them suffers if the winter's fall of snow be a small one.

Over part of the Willamette Valley and the Coast Ranges regular land and sea-breezes are experienced, but they are somewhat local. A cool sea breeze from the west sets in every evening at Corvallis in summer and autumn about sundown, and in the morning a land breeze blows from the north-east. The sea-breeze occurs regularly at Albany, but is said not to extend farther than one mile east of the town.

The following remarks on the climate of Walla Walla, in Washington territory, are of interest as applying to Eastern and North-eastern Oregon also.*

A settler writing from Walla Walla Valley says:—"One of the great peculiarities of this country is its mild climate. At this place, in N. lat. 46°, we seldom have snow before Christmas, and throughout the autumn for more than two months we have the most delightful weather, generally frost at night, but bright warm days, with the thermometer ranging from 55° to 70° Fahr.

"Singular phenomena peculiar to the country are the periodical warm breezes through the autumn and winter,

* Monthly Report of the U.S. Commissioner of Agriculture for 1869, p. 384.

which spring up away down in the valleys of California, break through the low passes of the Sierra Nevada range on the head of the Sacramento, and passing through by the Klamath Lakes, sweep along the base of the Blue Mountains, and warm up the whole atmosphere beyond the 49th parallel. Such a breeze is blowing now, and at this writing, November 2, 6 o'clock A.M., the thermometer stands at 73°."

The following account of the climate of Eastern Oregon is extracted from an official account of the Board of Statistics and Immigration of Portland, Oregon, prepared by its secretary, John W. Drake, published in 1869, and reprinted in full in the Report of the U.S. Commissioner of Agriculture for 1869, p. 584 et seq.

I can fully bear out the statements made as far as my short acquaintance with the climate east of the Cascade Mountains goes, and from the information I gathered there from residents.

"The first thing that impresses a stranger in passing from Western into Eastern Oregon is the very decided change noticeable everywhere in the atmosphere, vegetation, and general aspect of the country. This is chiefly due to the difference in the climate of the two sections; Western Oregon has a wet climate, while the eastern part has a dry one. The winter of Eastern Oregon, though of short duration, generally brings with it several inches of snow on the tablelands and in the valleys. The weather is usually dry but quite cold. Snow remains from three to six weeks in the months of December and January some seasons; in others, only a few days. It is usual for stock to be grazed through these months without interruption, but occasionally there is a hard winter, rendering it necessary to do some feeding. The spring begins in February and lasts till the end of May, with warm pleasant weather and rain sufficient to

give life and vigour to the vegetation. The summers are hot and dry, but not sultry or oppressive. It is very seldom that rain falls in summer or early autumn; still the freshness of the mountain air renders the days pleasant and the nights cool and refreshing. The range of the thermometer is rarely above the summer temperature of Western Oregon, sometimes reaching 100°, but only at rare intervals. Ordinarily the thermometer indicates 90° as about the highest summer temperature, and 10° as the lowest for winter, although these limits may not mark the extremes in the case of an uncommonly hard winter or warm summer, occurring once in from five to eight years."

Of course the climate of the high Cascade Mountains is rigorous in proportion to the altitude; snow falls on the highest points of the "Willamette Valley and Cascade Mountains" military road, at from 4000 to 4500 feet elevation above sea level, from 15 to 16 feet in depth in ordinary seasons. In the winter of 1876–1877 there was much less than usual. Horsemen cross the pass all winter, but it is then impassable for waggons.

On Mary's Peak, in the Coast Ranges, at an altitude of about 4000 feet, the shepherds tend sheep during the months of July, August, and September, leaving on October 1st.

In the year 1862 the snow on the summit of the peak did not disappear from view at the village of Philomath until August 12, and probably there was some there all the year round.

In 1873 snow had entirely disappeared on June 8th.

In 1876 there was snow in a drift remaining as late as July 4th.

HEALTH.

That the climate of Western Oregon is unusually conducive to health, the air being peculiarly pure and mild

and yet bracing, is proved by evidence of a very conclusive character. The Coast Range affords protection from the ocean gales, while the Cascade Mountains keep out cold winds and snowstorms from the north and east to a great extent, though not entirely so. The exemption from sharp winds and violent changes of temperature, thus secured, renders the inhabitants far less liable to throat and lung troubles, rheumatism, and inflammatory diseases generally, than in other parts of the Union.

Western Oregon is not exempt from fevers, but the inhabitants suffer much less from such than elsewhere in the United States. Typhus and typhoid fevers occur, but have never prevailed to an epidemic extent. Of malarious fevers, which are so troublesome in the Western States, and even in the valleys of California, only a mild type occurs, which yields readily to treatment. A well-known physician, a resident of Oregon for twenty years, in treating of the subject, says:—

"For our somewhat remarkable immunity from malarial disorders, considering the extent and depth of our river-bottoms, we are indebted to our northern latitude, to the daily sea breeze borne to us from the waters of the Pacific, to our cool, bracing nights, and to the medium temperature of even our warmest days."

Ague is, however, very prevalent in some parts of the Willamette Valley, but settlers seem to get acclimatized to it, and it is never fatal, as I was told. As appears from the U.S. Statistics the number of deaths occurring in Oregon from intermittent and remittent fevers is below the average number for the whole United States.

In the warmest summer months children are troubled in Oregon, as elsewhere, with summer complaint; but the disease is ordinarily quite amenable to treatment, and seldom runs into dysentery.

The greater dryness of Middle and Eastern Oregon renders these sections even more exempt from throat and lung troubles, rheumatism, and fevers, than the region west of the Cascade Mountains.

According to the official report of the Surgeon-General of the United States army, the deaths from fever at the military posts in Oregon compare as follows with those at posts in other parts of the country:—

Oregon, 1 death in	529
New England, 1 death in	283
Southern frontier of Texas, 1 death in ..	67
St. Louis, Mo., 1 death in	113
New York Harbour, 1 death in	66

But the most striking illustration of the general healthfulness of Oregon is afforded by the mortality statistics taken in connection with the national census of 1870.* *According to them, the death-rate in Oregon was less than in any other State or Territory, with the single exception of Idaho,* as will be seen from the following table, giving the exact figures of the census:—

OREGON	0·69	Indiana	1·05
Alabama	1·08	Iowa	0·81
Arizona	2·61	Kansas	1·25
Arkansas	1·26	Kentucky	1·09
California	1·61	Louisiana	2·00
Colorado	0·94	Maine	1·23
Connecticut	1·26	Maryland	1·24
Dakota	0·71	Massachusetts	1·77
Delaware	1·25	Michigan	0·94
District of Columbia ..	1·53	Minnesota	0·80
Florida	1·21	Mississippi	1·11
Georgia	1·15	Missouri	1·63
Idaho	0·33	Montana	0·90
Illinois	1·33	Nebraska	0·81

* Ninth census of the United States of America. Washington, 1871. Vol. ii. Vital Statistics, p. 3.

Nevada	1·45	Tennessee	1·13
New Hampshire	1·35	Texas	1·37
New Jersey	1·17	Utah	1·03
New Mexico	1·28	Vermont	1·07
New York	1·58	Virginia	1·24
North Carolina	0·98	Washington	0·93
Ohio	1·11	West Virginia	0·91
Pennsylvania	1·49	Wisconsin	0·94
Rhode Island	1·26	Wyoming	0·81
South Carolina	1·05		

The lowness of the percentage of deaths in Oregon is due, no doubt to a considerable extent, to the comparative youth of the State, and the percentage has increased as the State has grown older, as appears from the following statement extracted from the above-cited census:—

Percentage of deaths to population:—

In 1850.	For the entire United States			1·30	For Oregon	0·35.
„ 1860.	„	„	„	1·25	„	0·57.
„ 1870.	„	„	„	1·28	„	0·69.

Nevertheless the statistics extend over a sufficient number of years to show that Oregon is exceptionally healthy. The early colonists who peopled the State were, as far as I saw and could ascertain, to a large extent middle-aged men.

During our visit to Oregon an epidemic of diphtheria was raging, and was causing a lamentable amount of deaths amongst children. Late advices from the country state that it had ceased in September.

NATURAL RESOURCES.

Soil.—The quality of the soil of Oregon varies extremely, according to the geological formation of the district, or of that from which the alluvium is derived. On the summits of the Cascade Mountains wide tracts are passed over which are covered with very fine volcanic

dust and lapilli. This soil, where there is plenty of moisture, yields a considerable growth of grass, and supports on the sheltered eastern slope of the mountains a fine growth of pine forests.

At the foot of the Cascade Mountains eastward are stretches of alkaline plains traversed in places by lava flows, where the lava surfaces are uncovered by any soil. In many places in this district, owing to the want of rain to wash down the banks, the rivers form cañons or deep cuttings in the plain and flowing at the bottoms of these do not deposit any alluvium, and thus form bottom lands; but wherever bottom lands are formed the soil is very rich and yields abundantly, as seen to be the case at Squaw Creek and in the Ochico Valley.

Much of the land about Crooked River Valley, and in other parts of the eastern plains, is of the kind called alkali soil.

Mr. T. Antisell * has analysed the so-called alkali of the alkali soil of the western plains brought from Western Kansas. It did not effervesce with acids, nor exhibit an acid reaction to test paper. It contained

Water	3·6
Insoluble Clay	1·5
Cloride of Sodium	Traces
Sulphate of Soda	94·6

Further investigations and experiments were made by Mr. Antisell on "alkaline" soils from Nevada.† Three samples analysed contained from 4·59 to 8·75 per cent. of saline matters soluble in water, consisting mainly of chloride of sodium and potassium, which amount of salt is

* Report of the U.S. Commissioner of Agriculture, 1870, p. 96.

† Report of the U.S. Commissioner of Agriculture, 1870 p. 100.

far in excess of any usual proportion and of what is needed. The soils are not wanting in any of the elements which the majority of plants require. Mr. Antisell, after experimenting with various plants, concludes that the only way to treat the soil is by irrigation, and that beet should be planted as a first crop to assist in removing the salt.

From what I saw of the Eastern Oregon sage plains (i. e. dry plains covered with low bushes of a species of Artemisia), I should say that their soil contains far less salt than the above-cited Nevada earths. And no doubt large tracts will eventually be brought under cultivation by irrigation. Excellent crops are raised in Ochico Valley already on such soil. I saw there crops expected to yield 30 bushels of wheat to the acre, and the same land was said to have yielded 40 bushels last year. The crop was short this year because of the unusual smallness of the winter snow-fall and consequent shortness of water. The want of market and communication prevents the farther development of the Ochico district as a wheat field.

In Western Oregon there are no barren tracts. The Willamette Valley presents a wide expanse of most fertile alluvium. The soil is a dark loam and vegetable mould with a clay subsoil. In many places this soil has produced crops of wheat and barley for from fifteen to thirty years without manure, and with very indifferent cultivation, and continues to produce abundantly. Similar fertile stretches of bottom land of smaller extent exist in the valleys of the Umpqua and Rogue Rivers, and along the courses of the smaller rivers, such as the Siletzt, Luckiamute, and Yaquina.

Even in the wide flat expanse of the Willamette Valley, which might be supposed to be of pretty uniform formation, the soil varies very much in quality according as the clay rises more nearly to the surface, and the land

varies very much in value. The same is the case with the land lying within the area of the Coast Ranges as seen by us in the Yaquina district. The Coast Ranges there are composed of tertiary beds of marls, clays, and sandstones, and there is great difference in the quality of the resulting soil; such differences occurring within very short distances, so that it is impossible to arrive at conclusions as to the value of particular tracts of land from any general description of the district any more than such would be the case in England.

Thus on a farm near Corvallis of only 525 acres, the owner told me the soil varied so much as to cause a difference of yield per acre of oats of between twenty and eighty bushels, and the wide variation was plainly visible in the appearance of the crops. Even in the same field of a few acres there were great differences visible.

In some places in the Coast Range district the hill tops seem to be formed of very poor, hard, clayey soil. They rapidly become parched in the dry weather, and partially bare. In others fine rich soil, often thick, black, vegetable mould, evidently resulting from the debris of a fertile growth of forest continued forages, exists on these high lands, and they are covered with dense beds of fern. In many places in the Yaquina River district the soil is a red loam, which is of a very fair quality. By far the most fertile land in the State is beaver-dam land. The patches of this land occur in the valleys, and are the results of the damming of the streams by beavers in past times, and are evidently in many cases of great age. They are stretches of flat land, composed of an extremely rich, black vegetable mould, often of enormous thickness, and are usually swampy until drained, but the draining of them from the manner of their occurrence is a comparatively easy task, and they then yield wonderful crops. Unfortunately they are of small extent, but they occur in all

parts of Western Oregon in the lower valleys, and also high up in the Cascade Mountains or Coast Ranges.

Similar in nature somewhat to the last-mentioned lands are the swamp lands, wide tracts of which exist at the mouths of the rivers as seen by us near the mouths of the Yaquina, Willamette, and Columbia Rivers. These lands require to be embanked and pumped dry before they can be tilled, but then yield abundantly.*

FORESTS OF OREGON.

The U.S. Commissioner of Agriculture, in his Report for 1875, estimates the total area of Oregon in woodland at 15,407,528 acres out of a total area of the entire State of 60,975,360 acres.

The Cascade Mountains, the Coast Range, and the Callapoia Mountains, as well as a large part of the valleys of Western Oregon, are covered with forests, affording an inexhaustible supply of hard and soft timber. In the valleys, different kinds of ash, oak, maple, balm, and alder, as well as fir, cedar, spruce, pine, and yew, grow in great abundance. In the foot-hills, scattering oaks and firs, with a thick second growth in many places, are found. The mountains are mostly covered with thick growths of tall fir, pine, spruce, hemlock, cedar, larch, and laurel, without much undergrowth. Two kinds of cedar (Thuja sp.), three of fir (red, yellow, and white), and four of pine (Pinus monticola, P. nobilis, P. contorta, or black pine, and P. ponderosa, known as pitch or yellow pine) are indigenous to Oregon. Trees attain an unusually fine development, both as regards height and

* For information on the reclamation of swamp lands, see Report of Commissioner of Agriculture, 1872, p. 179, where an account is given of the reclamation of swamp and overflowed land in California. The results are most encouraging

symmetrical form. In the northern part of the State the red fir (Abies Douglasii) abounds. and often measures two hundred to two hundred and fifty feet in height, with trunks nine feet in diameter, clear of branches up for one hundred to one hundred and fifty feet. Out of such trees eighteen railcuts have been made, and five to ten thousand feet of timber. Alder-poles, from eighteen to thirty inches in circumference, and hazel-stems from one to five inches in diameter, are of common occurrence. Planks are sawn from alder saw-logs measuring twenty to thirty inches in diameter. In the forests south of the Umpqua yellow pine is found, as also an abundance of sugar pine, the wood of which is in great demand. For commercial and industrial purposes the red cedar, red fir, hemlock, and sugar pine, maple and ash, are the most valuable. Black walnut and hickory have been introduced and cultivated with success.*

The following statistics of the timber of Oregon are taken from the Report of the U.S. Commissioner of Agriculture for the year 1875.†

TIMBER.—*Baker County* has a timber-area of 500 square miles, ranging from $2.50 to $10 per acre. The timber is principally pine and fir. Wood is worth $4.50 per cord, (gold); clear lumber $25 per M; common, $15. The timber land of *Benton* lies in a belt of one-eighth mile wide by forty-five miles in length, along the Willamette River,

* Veneers made from the Oregon maple were exhibited at the Centennial of 1876. They were universally admired, and awarded a medal and diploma "for," in the words of the judges, approved by the commissioners, "rare beauty, extreme fineness of grain, beautiful polish, toughness of fibre, and of great value for ornamental and cabinet work." Again OREGON CURLED MAPLE, "For beauty of specimen."

† Report of the Commissioner of Agriculture for the year 1875. Washington Government Printing Office. 1876. Pp. 330–331. M = 1000 cubic feet.

and another belt in the Coast Range Mountains, twenty-five by thirty miles. The former belt will average 5 M of timber and 50 cords per acre. About 25 per cent. of the mountain timber is good, and will average 10 M of lumber per acre. *Clackamas* is one of the best timbered counties in the Willamette Valley; fully one-half its area is in heavy timber. Firs are most abundant and useful. The valley-lands average 300 cords, or 40 M of lumber per acre; mountain-lands, 500 cords, or 40 M of lumber per acre. Much of this lumber is sold to San Francisco and the Sandwich Islands. Rough-red and yellow fir-lumber brings, in the market, $12 per M; spruce and white fir, $18; white cedar oak, maple, and ash, $50; cord-wood sells at $2 to $4 per cord. About two-thirds the area of *Curry* is covered with forests of yellow, red, and white fir, sugar pine, white cedar, spruce, white, and other oaks, and madroño. The timber-lands of *Douglas* are principally covered with the different varieties of evergreens and oaks. There are thousands of acres which would yield 300 to 600 cords per acre not yet taken up. Oak-timbered land yields on an averge 100 cords per acre, worth $2 per cord, at the stump. Fir-lumber is worth $10 per M, at the mills; pine and cedar, $20 to $30. Not over one-third the area of *Lane* is woodland. This embraces the different varieties common to the Pacific coast. Oak-wood, delivered, is worth $3 to $4 per cord. The timber land of *Linn*, occupying half its area, is comprised in three belts of dense forests, half of which is red fir. Within the last twenty-four years, thousands of acres of woods have grown up from seed; trees 40 to 80 feet high, with a diameter from 10 inches to 2 feet. There have been made from one acre of fir-timber 6000 rails. Summer-fires, started by travellers and hunters, anunally destroy some of the finest forests. *Multnomah* has a large area of timber-land, mostly yellow and red fir.

The average wood-product is 50 M of timber and 50 cords. Fir grows rapidly; trees of sixteen years' growth, 70 feet high and 6 inches in diameter, have been cut. Three-fourths the area of *Tillamook* is in timber, and half of this is fir and hemlock. The wood product, per acre, is: cedar, 20 M, worth, at the mills, $18 per M; alder and maple, 18 M, at $24; fir and hemlock, 75 M, at $10; larch and spruce, 50 M, at $8; the forests of *Umatilla* are confined to the mountains, where they are very dense, and to narrow belts along streams. *Wasco* has immense forests in the mountains, many as yet inaccessible. Rough lumber, at the mills, is worth $10 to $20 per M; wood, $4 per cord.

TABLE SHOWING THE PERCENTAGE OF ACRES OF WOODLAND IN THE SEVERAL COUNTIES OF OREGON.

Counties.	Acres.	Per cent.
Baker	..	..
Benton	27,959	17·0
Clackamas ..	117,139	77·1
Clatsop	17,044	58·3
Columbia	18,479	59·3
Coos	13,340	49·2
Curry	2,997	20·9
Douglas	114,518	32·6
Grant	450	2·4
Jackson	20,128	42·3
Josephine	3,640	41·2
Lane	67,656	22·8
Linn	55,159	21·5
Marion	66,183	48·7
Multnomah ..	46,395	67·8
Polk	98,761	44·0
Tillamook ..	2,981	37·6
Umatilla	6,917	9·0
Union	1,726	2·1
Wasco	3,707	9·0
Washington ..	73,891	66·3
Yam Hill	1,931	0·8
Total	761,001	31·8

On the banks of the Luckiamute River on land belonging to the Corvallis and Yaquina Bay waggon road grant, we saw abundance of red firs which would cut into from six to seven logs of 16 feet in length, and were 6 feet in diameter at a couple of feet from the ground. Such timber is worth standing on the spot, as the owner of a saw mill at the place informed me, from $1 to $1.50 per 1000 cubic feet, and when sawn $10 per 1000 superficial feet of 1 inch stuff. On Depot slough, nearer the coast in the same district, I measured a cut spruce which was 140 feet in height and 9 feet in diameter at 3 feet from the ground.

MINERALS—The following is extracted from the Report of the Commissioner of the U.S. General Land Office for the year 1874, p. 229, and refers to the coal and mineral lands of Oregon :—

"The mining business in Oregon shows a marked increase during the year. The coal mines at Coos Bay continue to be extensively worked, and constitute one of the most important sources of revenue in the State. New deposits are being constantly developed, and the old ones as yet evince no signs of exhaustion. Quartz and placer gold mining is more active than heretofore in Eastern and Southern Oregon, and the survey of mining claims is becoming a considerable branch of the business of this office. Valuable discoveries of gold, iron, and copper ores, cinnabar and coal, are frequently reported in various parts of the State. The mineral resources of Oregon have hitherto attracted but little attention in comparison with the overshadowing importance of her commercial, agricultural, and manufacturing interest ; but the time is coming when, under the magical touch of capital and the exorcism of skill, these hidden channels of treasure will open, and pour their products into the swelling aggregate of her substantial wealth."

Again in the Report for 1875, the Surveyor-General

says: "The rapid growth of the mining interests of Oregon within the past year has caused an increased demand to be made on this office for the survey of mining claims."

The mineral wealth of Oregon is very great, but as yet very imperfectly developed, mainly owing to the want of capital. Gold was first discovered in 1851, in the counties of Jackson and Josephine, in the extreme south of the State; and mining industry promises to take a new start there, placer as well as quartz mines having been discovered within the last two years which are very promising. Most of these mines are situated near the stage-line sixty to seventy miles south of Roseburg, the terminus of the Oregon and California Railroad. Baker and Grant Counties, in Eastern Oregon, have also yielded many millions of the precious metal. In Baker County, especially in the vicinity of Baker city, gold-mining is carried on very actively at this time, and with good results. On the ocean-beach near Coos Bay placer mines are worked to a considerable extent. Rich gold-quartz lodes have been discovered and partially worked in the southern part of the Cascade Mountains, but their distance from railroads, and the want of machinery for working them, has until now prevented their development on a scale commensurate with their richness. Were the same amount of capital, enterprise, and trained skill brought to bear upon the gold mines of Oregon that is now again increasing the gold product of California at a rapid rate after years of decline, the former State would not be far behind the latter in the production of precious metals. The yearly gold product of Oregon represents now a value of over $1,500,000. Mr. Grover puts the product of gold and silver together in 1876 as $2,000,000.

Lead and copper have been found in large quantities

in Jackson, Josephine, and Douglas Counties, on Cow Creek, a tributary of the Umpqua, and also on the Santiam River.

Large deposits of rich iron ore exist in nearly every part of the State. The most important of these is situated near Oswego, on the Willamette, about six miles south of Portland. The ore from it yields about fifty-four per cent. of pure iron. Other extensive deposits exist in the counties of Columbia, Tillamook, Marion, Clackamas, Jackson, and Coos. A large bed of ore has been found at St. Helen's, on the Columbia.

That essential element in the development of mineral resources, coal, abounds in Oregon no less than iron. Beds of great thickness exist on Coos Bay, in Coos County, on the northern Umpqua, and in other parts of Douglas County. Beds, as yet but partially explored, have been found on Yaquina Bay, at Port Oxford, near St. Helen's on Pass Creek, on the line of the Oregon and California Railroad, and at different other points in Clackamas, Clatsop, and Tillamook Counties. But only a few of these coal mines are regularly worked. The Coos Bay mines keep a fleet of schooners busy carrying coal to San Fancisco, where it is highly esteemed. With the exception of one other kind, it is the best coal produced on the Pacific coast.

What with the abundance of coal, and the wealth of iron, the day cannot be far distant when Oregon will have a well-developed iron industry.

Limestone, brown and grey sandstone, and marble quarries are being worked in the State.

NATURAL PASTURAGE.—The natural grasses of Western Oregon are of a fine quality, and retain their fattening qualities until late in the autumn. The rains, which fall regularly in May and June, prevent an early drying up. In the foot-hills, especially where the timber has been

destroyed by fire, wild pea-vine grows in great abundance, furnishing most excellent pasturage for stock. But it is in Middle Oregon, especially in the south-eastern portion of it, that the most extensive natural pasturage is found. It is estimated that the pasture-ground there comprises about 33,000,000 acres. A great variety of native grasses grow in this vast region. Amongst these the "bunch grasses," so called by the stockmen because they grow in tufts, have the highest reputation. Three kinds are distinguished, which are Agropyrum repens, Sclerochloa Californica, and Kœleria cristata (blue bunch grass). In short, Oregon, as a whole, is a very fine grazing country. Stock generally obtain green pasturage all winter.

Water Supply.—What is stated in the foregoing, under the head "Climate," regarding the regularity and copiousness of rain in Western Oregon, accounts in the largest measure for the fact that it is one of the best-watered regions in the Union. The snow in the high mountains is another unfailing source of supply, from which all the streams arising in the Cascade Mountains are regularly fed during the warm season. Fine springs abound. Nowhere in Western Oregon is there a scarcity of water. But in certain parts of the country east of the Cascade Mountains the supply is insufficient.

The vast water-power of Western Oregon will be described in the subsequent chapter on *Commerce and Industry*.

Fisheries.—The lakes, rivers, streams, and creeks of Oregon, beyond the reach of tide-water, teem with trout of superior quality. In some rivers in South-eastern Oregon the sucker-fish is found in immense quantities; also in the Willamette. The Columbia River and other rivers emptying into the ocean abound with salmon and sturgeon: while tom cod, flounders, and other kinds of

sea fish are caught along the coast. Oysters, clams and mussels, crabs and shrimps, are found at Tillamook and Yaquina Bays, and other points on the coast. Oysters, which are small, but of excellent quality, abound at Yaquina Bay. They are dredged from the deeper water and put out to fatten in shallow beds, which are left almost dry at low water. They are shipped in large quantities to San Francisco.

Trout and salmon of several species constitute an article of trade, but the former as yet only to a limited extent. The salmon-fisheries of the Columbia River, however, are of great commercial importance. The fishing season begins in April, and is over by the end of July. The fish are taken in tide-water by nets and traps in immense quantities as they ascend the river fresh from the ocean. They are cured fresh in one and two pound cans, and cured by pickle in barrels and half-barrels. The Columbia salmon is very fat, and of peculiarly fine flavour.* Salmon-fishing is also carried on at the mouths of the Rogue, Umpqua, Coquille, and Nehalem Rivers, where the catches, however, serve principally to supply the home consumption. A fish-hatching establishment, intended mainly for raising the Chinook salmon (Salmo quinnat), is in full operation on the Clackamas, having been established by the Oregon and Willamette Fish Propagating Company. At the end of July white or salmon trout of excellent quality ascend the rivers, such as the Yaquina, in great numbers, and are very easily caught.

* Oregon Salmon, as prepared for the markets of the world, was exhibited at the Centennial of 1876, and awarded medals and diplomas, "for," in the words of the judges, approved by the Commissioners, "in cans, very great excellence, the preparation being wonderfully sound, and of choice flavour."

"Pickled, a very excellent preparation." Again, "for good flavour and soundness."

GAME.—It would be difficult to find a finer field for the sportsman than Oregon. In all the valleys of the State deer abound, but are of course most abundant in the wilder districts. There are four species: the white-tailed deer (Cervus leucurus), black-tailed deer (C. Columbianus), mule deer (C. macrotus), and the large wapiti deer (C. Canadensis), or, as it is called invariably in the west, the elk. The elk and mule deer are local, in the State, whilst the white and black-tailed deer seem more widely spread. There are plenty of deer in the Yaquina Valley, and the settlers use them as a regular source of food. All the deer have their regular annual migrations. In the Cascade Mountains they go back into the wilder heights during summer and move lower down in the beginning of autumn. Many are shot on these migrations by hunters posted at known passes. A young hunter at Camp Polk, on the east of the Cascade Mountains, told me that he shot 150 deer in one winter, killing them principally for their skins, which fetch about $1 apiece. We had some excellent venison from the black-tails when amongst the Cascade Mountains. In the Yaquina district these deer are usually hunted by hounds, being driven to take to water in a stream and there shot, the places to which they will probably run being known beforehand.

On the plains east of the Cascade Mountains antelopes (Antilocapra Americana) are abundant. Quails and various species of the grouse family, known in Oregon as the grouse (Tetrao obscurus), the pheasant (Bonasa Sabinii), the prairie-chicken (Pediocoetes phasianellus) and the sage-hen (Centrocercus urophasianus), abound, are very easily obtained, and are excellent eating, though the sage-hen feeding on the bitter sage of the eastern plains is only good when young, or at certain seasons. In the autumn wild geese and ducks swarm along many

of the water-courses. Wild swans are very numerous on the lakes and rivers of South-eastern Oregon. The Cascade and Coast Ranges and the minor chains are frequented by beavers, yellow and silver foxes, mink, and marten. Black, cinnamon, and grizzly bears, wild-cat, wolf, and the cougar, or puma, roam in these mountains. Of the larger game, however, only deer visit the inhabited portions of the State.

PRODUCTS.

Western Oregon is unquestionably one of the finest farming countries in the United States. In its rich soil and mild climate almost every kind of agricultural product grown in the temperate zone in America and Europe can be raised, and attains a perfection, both as to size and quality, that is rarely found in other parts of the Union, not even excepting California.

GRAIN.*—The leading staple of Oregon is wheat, which is noted for its superior quality and large yield, and commands a high price in the grain markets of the world. The berry is very fair and full, often weighing from 65 to 69 lbs. to the bushel measurement, and commanding very high prices in the Liverpool market. English wheat is reckoned at 61 lbs. per bushel.

The following quotations of the prices of wheat in the Liverpool market in the winter of 1875 show the high standard attained by Oregon samples:—

* Several medals and diplomas were awarded by Centennial Commissioners to Oregon exhibitors for fifteen varieties of wheat, five of oats, white rye in grain, with straw nine feet high; again, "ninety-day white wheat," grain and sheaf raised upon land neither ploughed nor harrowed, and yielding thirty bushels per acre. Also upon Oregon flour and oatmeal, all of excellent quality.

	s.	d.		s.	d.
British white wheat per cental	10	1	to	10	7
Ditto red	9	7	„	10	1
Australian	10	8	„	10	10
Oregon	10	6	„	10	8
Californian	10	4	„	10	6
Ditto Club and choice	10	7	„	10	8
Chilian	9	8	„	10	1

Next in importance to wheat rank oats. The standard weight for oats in Oregon is thirty-six pounds per bushel; but the country is so well adapted to their growth, that the weight of forty-five, even of fifty, pounds to the bushel is often reached. Barley is also successfully raised. Maize is grown in many localities with success, but is not made a speciality, the average summer being too cool for its successful culture.

The relative local productiveness varies in Oregon, as everywhere else, according to the nature of the soil, and the more or less skilful cultivation. High cultivation is extremely rare. Indeed, as a rule, the ground is not manured at all, receives a very shallow ploughing, is given no rotation of crops; in a word, is very badly farmed. In the report of the U.S. Commissioners of Agriculture for 1875 the product for each principal crop in Oregon is given as follows:—

Oregon.	Quantity produced in 1875.	Average yield per Acre.	Number of acres in each crop.	Value per bushel, lb., or ton.	Total Valuation.
Indian corn bushels	96,000	26·5	3,623	91 cents	87,360
Wheat .. „	4,500,000	17·6	255,681	87 „	3,915,000
Rye .. .. „	4,500	19 5	230	95 „	4,275
Oats .. .. „	2,450,000	35	70,000	55 „	1,347,500
Barley .. „	450,000	27	16,666	70 „	315,000
Potatoes .. „	845,000	130	6,500	76 „	642,000
Hay .. .. tons	120,000	1·37	87,591	$11·07	1,328,400

These statistics are compiled by the U.S. Commissioner from information received from a corps of reporters, consisting of a chief and three assistants in each county of the State, who are selected for their known intelligence and judgment through the aid of the Agricultural Societies or of the Representatives in Congress.*

On comparing the average wheat yield of Oregon with that of other States of the Union, as set forth in the following table from the above quoted report, it will be seen that Oregon, notwithstanding bad farming, stands very high, indeed, on the list, being excelled only by the Territories with a yield of 19·5 bushels of wheat per acre, and by Nevada and Texas with a yield of 18 bushels, and having a larger yield than any other State, although Vermont comes very near with 17·5 bushels, and several others, Kansas, New Hampshire, Minnesota yield 17. California yields only 11.

In yield of rye (19·5 bushels) Oregon is equalled only by Minnesota, and the Territories, excelled by no State; Vermont comes near with 19 bushels.

In that of oats (35 bushels), Oregon is beaten by Vermont with 39 bushels, Wisconsin with 38·5, New Hampshire with 38, Nevada and Massachusetts with 36, whilst the Territories and Nebraska equal it in yield.

In yield of barley (27 bushels) Oregon is excelled only by Wisconsin with 31, Texas 30, Vermont 29, Minnesota 28, and the Territories 28·5.

In yield of potatoes (130 bushels) Oregon is excelled only by Vermont with 155, Massachusetts with 150, and equalled only by the Territories and Nebraska.

In the yield of hay, 1·37 tons, Oregon is excelled by seven States, two of which, Louisiana and Mississippi, have a yield of 1·50 tons, and equalled by one out of the thirty-seven States and the Territories.

* Report of Commissioner of Agriculture, 1875, p. 18.

C.—Table showing the Average Yield per Acre, and in the various States of

States.	Maize.		Wheat.		Rye.		Oats.	
	Bushels.	Price per bushel.	Bushels.	Price per bushel.	Bushels.	Price per bushel.	Bushels.	Price per bushel.
		$ c.		$ c.		$ c.		$ c.
Maine	30·5	0 96	14	1 64	16·7	1 18	28	0 56
New Hampshire	38	94	17	1 64	18·5	1 11	38·6	57
Vermont	37	94	17·5	1 55	19	1 01	39	50
Massachusetts ..	37	95	16	1 37	17	1 07	36	61
Rhode Island ..	27·5	1 10	..	..	15	1 20	30	60
Connecticut ..	29	1 00	16	1 33	15	1 10	28	61
New York	34	74	8	1 31	10	86	32	44
New Jersey ..	41	65	12	1 36	12·7	89	24	48
Pennsylvania ..	40	58	13·8	1 29	13·4	85	30	41
Delaware	26	57	13·5	1 40	13·5	95	21	43
Maryland	30	55	11	1 27	12·3	77	20	44
Virginia	22	54	8	1 21	9	78	15	49
North Carolina	15	60	7·5	1 24	9	87	13	58
South Carolina	10·2	1 00	7	1 70	6·5	1 37	12·5	86
Georgia	10	86	7·5	1 50	6·7	1 49	11	89
Florida	10	1 08	..	..	..	..	13	1 05
Alabama	12·6	75	8·5	1 23	10·5	1 52	14	84
Mississippi ..	18	72	11	1 51	11·8	1 42	18·5	89
Louisiana	15·5	89	..	..	..	..	14	1 10
Texas	20	83	18	1 27	18·1	1 10	32	72
Arkansas	30	52	12·3	1 05	13·7	1 03	29	58
Tennessee	26·5	41	8·5	1 01	9·4	89	18	45
West Virginia ..	29·1	56	6·8	1 38	11·5	93	21	42
Kentucky	33·3	41	10	1 05	11·7	91	21	46
Ohio	34·5	44	9·5	1 09	10·5	76	27·2	36
Michigan	33	61	13·5	1 15	14·1	86	35	43
Indiana	34	39	9	97	12	75	29	33
Illinois	34·3	34	10·5	91	16·5	61	33	28
Wisconsin	21	54	14	91	16·5	68	38·5	33
Minnesota	29·2	42	17	86	19·5	59	35	32
Iowa	35	27	9·7	71	18	27	37·7	24
Missouri	36·6	28	9	95	13·4	68	31·6	27
Kansas	40	23	17	87	17·5	51	33	24
Nebraska	40	20	9·8	64	16	52	35	22
California	36·3	1 07	11	1 18	17·5	92	32	72
Oregon	26·5	91	17·6	87	19·5	95	35	55
Nevada	29	1 08	18	1 20	..	..	36	74
The Territories	26	1 02	19·5	1 00	..	..	35	71

* N.B.—The prices given in the present table are the

THE PRICE* PER BUSHEL, POUND, OR TON OF FARM PRODUCTS THE UNION FOR THE YEAR 1875.

BARLEY.		BUCKWHEAT.		POTATOES.		TOBACCO.		HAY.	
Bushels.	Price per bushel.	Bushels.	Price per bushel.	Bushels.	Price per bushel.	Pounds.	Price per pound.	Tons.	Price per ton.
	$ c.		$ c.		$ c.		$ c.		$ c.
21	0 89	23·5	0 70	107	0 42	..	..	0.95	10 85
25·1	1 02	20	78	133	42	1,600	0 15	95	12 81
29·4	91	21·3	71	155	33	1,500	16	95	10 30
24·5	1 09	11	62	150	52	1,350	19	1·00	20 89
20	1 00	..	..	130	50	..	..	95	23 00
20	1 12	17·5	95	108	56	1,500	22	1·05	21 75
18	89	16	67	107	36	800	11	1·17	14 00
..	..	17	77	82	54	..	..	1·00	21 36
23	1 02	20	69	96	42	1,400	10	1·10	17 12
..	..	..	..	75	72	..	..	1·20	18 33
..	..	23·3	61	72	54	675	8·3	1·00	18 93
..	..	17·5	67	82	52	630	8·5	1·20	16 53
..	..	..	..	85	67	500	9·7	1·25	12 51
..	..	..	..	90	1 01	..	..	1·00	20 50
12	1 78	..	..	68	1 20	550	23·7	1·40	17 68
..	..	..	..	..	..	750	25	..	..
..	..	..	..	50	1 22	465	25	1·30	19 43
..	..	..	..	75	97	317	25	1·50	17 00
..	..	..	..	75	1 10	..	..	1·50	16 25
30	95	..	..	100	1 22	650	25	1·25	12 50
..	..	..	..	101	79	822	12·2	1·40	16 30
19	80	16·8	75	70	56	675	7·2	1·36	16 24
15	75	17	82	110	51	680	10·5	1·20	13 74
20·5	90	..	..	98	49	630	6·6	1·30	14 25
18·5	90	15	82	103	36	700	6	1·10	12 97
20·5	92	18·7	69	125	31	..	..	1·20	14 50
17	88	19	95	104	36	500	5·5	1·30	11 49
25·6	70	15	80	128	32	550	5·6	1·37	9 73
31	92	13	79	105	29	560	6	1·35	9 53
28	76	15	76	125	29	..	..	1·35	5 25
22·3	53	19·6	77	110	24	..	..	1·35	5 78
19	94	17·4	65	110	37	850	5·7	1·30	10 28
21·8	57	18·5	72	112	27	670	7·8	1·35	3 04
22·4	45	21·5	75	130	19	..	..	1·40	3 65
18	91	25	1 50	120	94	..	..	1·40	16 59
27	70	..	..	130	76	..	..	1·37	11 07
26·5	1 03	..	..	110	95	..	..	1·30	18 00
28·5	1 00	..	..	135	69	..	..	1·40	13 59

average prices over the entire range of the several States, and

In all crops except that of maize, to suit which the summers are not hot enough, Oregon far exceeded in the year 1875 the average of the United States, as will be seen from the following table :—

G.—Table showing the Average Yield and Cash Value per Acre, and Price per Bushel, Pound, or Ton of Farm Products for the Year 1875 for the whole United States.

Products.	Average yield per acre.	Average price per bushel.	Average value per acre.
Indian corn bushels	29·4 +	$0 42·0 +	$12 38
Wheat .. .. „	11·0 +	1 00·0 +	11 16
Rye .. .. „	13·0 +	76·9 +	10 02
Oats .. .. „	29·7 +	36·5 +	10 86
Barley .. „	20·6 +	81·1 +	16 73
Potatoes .. „	110·5 +	38·9 +	43 05
Hay .. .. tons	1·18+	12 27	14 55

The Oregon crop in 1875 of 17·6 bushels of wheat per acre is the worst which has occurred since separate returns for the yield of the State have been given in the U.S. reports, i.e. for a period of seven years. No doubt the comparisons given above would show more favourably still if made from returns of other seasons. The highest average yield per acre given for Oregon in any year is 19·5, and the average crop of seven years up to 1875 18·8 bushels of wheat. Supposing the wheat to weigh 65 lbs. to the bushel, as it is said to do, this average of 18·8 bushels would be equal to 20 bushels per acre according to the English standard of 61 lbs. to the bushel. But no doubt 65 lbs. is above the average. I have no statement of the average weight

hence depend on facilities and expense of transport. The prices at centres of export are much higher.

of Oregon wheat to go upon. Its high price at Liverpool shows it to be heavy.

The average of 20 bushels of wheat is small as compared with that of England, which is set down at 28 bushels by Caird,* as an average of thirty-two counties inspected by him.

Barley averaged in Oregon in 1875 29 bushels, in England the average is 36.

Oats in Oregon in 1875 35, in England the average crop is from 50 to 60.

The low average in Oregon is almost certainly due to the very superficial farming, and the low results obtained from volunteer crops. There seems no reason to doubt that the statistics, considering the manner in which they are prepared, are substantially correct, and they were borne out by my own inquiries, though I had no opportunities of seeing any actual measurements.

I gained much information from a Mr. Simpson, a Scotchman and Presbyterian minister, who has taken to farming near Corvallis with great success. He farms about 525 acres on the verge of the foot hills of the Coast Range where they rise from the Willamette plain. He estimated his average wheat yield for this year at 25 bushels, though some would yield, he expected, as much as 40 bushels. He said the average farmer considered 20 bushels all round a good crop. Of oats he expected from 50 to 60 bushels per acre, from some of the land only 25. Oats would yield 80 if planted in the very best of his land, but this was reserved for wheat.

Another farmer, who farms part of Blodgetts Valley, told me that he expected as much as 30 bushels of wheat per acre off some of his land this year, and has once had 42 off an acre, but could not give me an average. He had once seen in the Willamette Valley a crop of 56 bushels. He expected to get 45 bushels of oats per acre.

* 'Our Daily Food.' Caird. Longmans and Co. 1865. P.12.

In Ochico Valley, in Middle Oregon, a Mr. Freeland, formerly post-master of Albany, told us he expected 30 bushels per acre from a fine crop of wheat which we saw growing, and that the present was an unfavourable season owing to want of rain. Last year he had 40 bushels and 50 bushels of oats.

An agent for the sale of threshing machines made in Minnesota told me that he saw 83½ bushels of oats threshed out of a measured acre in Benton County, this harvest, in a farm similarly situate with regard to the Coast Range to that of Mr. Simpson.

"The crop of winter wheat which received the first premium awarded by the Oregon State Agricultural Society at its fair in 1870 was of the 'Oregon white winter wheat,' variety. It was raised by Mr. T. W. Davenport, of Marion County, and yielded 912 bushels, weighing 63 pounds to the measured bushel, from 20 acres, more than 45½ bushels to the acre. Premiums for spring wheat were at the same time awarded to Calvin Neal, who raised 31 bushels of 'Russian' or 'ninety-days wheat' to the acre; and to James Finlayson, who raised 33 bushels of 'white Chili' to the acre.

"Two extraordinary crops are reported in 1870. Joseph Hamilton raised on 10 acres of bottom land 820 bushels of winter oats. The land had been under cultivation for twenty-two years. J. H. Robbins raised on 2½ acres of red hill land 250 bushels of Russian oats." *

We saw, however, a good many bad crops as well as good ones. Much of the land suffers not because the soil is not rich, but for want of proper drainage; and of this there is scarcely any but of the roughest character.

The following account of yield of oats and wheat is extracted from an address delivered by Mr. H. J. Dufour, late President of the Oregon State Agricultural Society,

* Monthly Reports of the U.S. Department of Agriculture for 1871. P. 130.

before the American Institute Farmers' Club in New York, Sept. 25, 1869:—

"Allow me to cite some well-authenticated facts to prove the fertilily of our Oregon lands. In Linn County, as president of the Agricultural Society of the State, I had the pleasure of awarding the premium to a farmer who raised 82 bushels of oats to the acre, weighing 43 lbs. per bushel; for the best ten acres of oats a premium for 78 bushels per acre, weight 41 lbs. per bushel; for the best ten acres of wheat showing 48 bushels per acre; and to another farmer a premium for a field of oats measuring 85 bushels to the acre. In Marion County the average yield of wheat is 33¼ bushels per acre. I have known 3500 bushels grown on 69¼ acres, and the grain weighed 66 lbs. per bushel."

The Official Report on Oregon published by the State Board of Immigration, from which free extracts have already been here made, says:—

"With anything like proper cultivation good land will yield from 25 to 45 bushels of wheat to the acre without manuring. With the highest cultivation a considerably larger yield is obtained from the best lands without the use of manure, but 30 bushels per acre is a fair average. Of barley from 40 to 60 and of oats from 50 to 80 bushels are raised per acre, according to soil and culture. Even on the foot hills the yield does not fall below this. There is no insect or mildew of any kind to injure the crops of cereals in Oregon."

Rust is almost unknown. Indeed, I find but one instance of its occurrence, which was in 1870, when red rust, the same as that of the Eastern States, did some considerable damage, and is reported as an hitherto unheard of occurrence.*

No failure of the wheat crop has occurred since the

† Monthly Reports of the U.S. Department of Agriculture for 1871. P. 129.

settlement of the country, that is during a continuous period of thirty-three years, and only twice during that time was there sufficient rain at harvest time to damage the crop.

The fact that wheat has been grown on the same soil for a long period of years without manure and has yet yielded a good crop, speaks well both for soil and climate. Similar results have been attained in England, where Mr. Lawes, at Rothamstead, in Herts, cropped stiff clay land continuously with wheat for ten years without manuring, and with an average produce of 16 bushels per acre, and a range of between 14 and 20.*

The Rev. Mr. Smith † in Northamptonshire, by a peculiar method of working the ground in alternate strips of winter and summer fallow, obtained an average of 36 bushels per acre, after cropping the same land without manure with wheat for eighteen successive years.

Grasshoppers have only been known to appear in Oregon since it was settled on one occasion, in 1854, when they entirely stripped the Umpqua and Rogue River Valleys. They did not spread far north, and have not appeared since in any part of the State. Caterpillars occasionally but rarely damage fruit trees, as in Douglas County in 1869, where one farmer had 700 out of 900 apple trees stripped of leaves and fruit.‡

The following account of agriculture in Lane county, Oregon, in 1868, is extracted from the Monthly Reports of the U.S. Department of Agriculture for the year 1870, and is instructive both as an account of a wide tract of Western Oregon stretching from the seaboard to the

* Caird's English Agriculture, 1850–51. Pp. 460, 462.

† J. Algernon Clark, Journal of the Royal Agricultural Society, 11 Ser., vol. i, p. 73.

‡ Monthly Reports of the U.S. Commissioner of Agriculture for 1869. P. 368.

Cascade Mountains, and including land at the head of the Willamette Valley and part of the Coast Ranges, and also as showing how much progress had already been attained in 1868:—

"The county extends from the Pacific Ocean on the west to the Cascade Range on the east, and covers an area of 2,240,000 acres of land, a large amount of which is well adapted to grain-growing, stock-raising, and agriculture generally. It was first settled in 1846, but still contains large quantities of vacant land, well adapted to agricultural and lumbering purposes. The soil in the small valleys, and the immediate foot of and between the hills and mountains, is dark and porous, formed by the admixture of decayed vegetation and a grayish clay loam. This soil, though exceedingly productive, seems to be of a thirsty nature, suffering if the summer drought is of long duration. Along the banks of the rivers and more extended valleys the soil is a rich alluvial deposit of decomposed earth and vegetable mould, producing fine crops of grain, grass, fruit, garden-vegetables, maize, roots, and in fact all the necessaries and luxuries of life. As you leave these bottoms, the soil of the prairies, with but few exceptions, although showing strong alluvial indications, seems to be of a fine quality, and composed of grayish, calcareous, sandy loam.

"These lands form a part of the great natural wheat fields of Oregon; and although readily producing grass, fruit, and vegetables of almost every variety, the prairie lands are especially adapted to the raising of wheat, oats, barley, flax, and every kind of grain.

"The kinds of timber found in this county are chiefly fir, cedar (thuja sp.), pine, hemlock, oak, ash, maple, and alder, pretty well distributed, and of quality and size well adapted to all lumbering purposes.

"The population is estimated at about 7000. The

number of acres in cultivation is about 60,000. The yield of various crops for 1868 was as follows:—

Wheat — bushels	.. ..	169,715
Barley „	.. ..	10,802
Oats „	.. ..	74,769
Indian Corn „	.. ..	8,113
Apples „	.. ..	28,818
Potatoes „	.. ..	220,263
Butter—pounds	.. ..	237,454
Cheese „	.. ..	15,690
Tobacco „	.. ..	12,888
Wool „	.. ..	159,715
Hay—tons	.. ..	4,227

"The stock in the county as estimated for the same year was as follows:—

Cattle	15,000
Horses	6,000
Hogs	12,000
Mules	300
Sheep	60,000

"There are thirteen saw-mills and four grist-mills in the county."

Barns and sheds for keeping grain, which are indispensable in other countries, are scarcely needed in Oregon. The grain is threshed in the field by machines, and thence sent in sacks directly to the warehouses for storage or exportation. Owing to the dry summers the wheat is not affected by the long sea-voyage to Great Britain, whither most of it is exported, and the double passage though the tropics incidental to it.*

* The State of Oregon at the Centennial Exhibition of 1876 was awarded diplomas for, in the words of the judges, approved by the Commissioners "grains, grasses, cereals, dried fruits, and vegetables, for the extent and excellent quantity of exhibit of all the above-named products;" again, "for a superior display of cereals, textiles, and timber resources, and the variety

METHODS OF FARMING.—Although reference has been made to the general superficial and bad farming of Oregon, it must not be supposed that there are not many men in the country who throughly understand what good farming should be, and who farm their land highly. The existence of an Agricultural Society and College in the State, which prepares reports and carefully awards prizes for crops, is an earnest of the interest taken in methods of agriculture within the State; and no one can read the few extracts from reports of practical farmers, cited in the present account, without receiving a favourable impression on this head.

The farming is done with very few hands, and by means of self-acting machinery to a very great extent.

"The sales of agricultural machinery in Portland, Oregon, during May, 1872, amounted to $300,000, the sales by one manufacturing firm reaching $176,000. According to estimate about one million dollars worth of agricultural machinery was sold in Oregon during the season."*

Much of the ploughing is done with the gang plough, used with four horses, driven two abreast. I saw such at work at Mr. Simpson's farm, near Corvallis. Mr. Simpson also uses hand ploughs. He ploughs his land from 5 to 8 inches deep.

The harvest being over in August, if rain fall early the stubbles are ploughed as early as in September, and again in the spring.

Sometimes a fresh stubble is ploughed in the autumn,

and excellence of her fruits, the salmon-fishery, and the educational system, evincing the steady development of the State." Also "for forest wood, for interest and variety of the exhibit, some of the specimens of most gigantic size."

* Willamette Farmer, cited in the Report of the U.S. Department of Agriculture for 1872. P. 457.

and the seed is put in at once; but this is very bad farming.

The land is given occasional summer fallows to kill the couch and weeds. It is ploughed in the spring, just before the dry weather; and again in late summer or autumn.

Sowing extends from the latter part of September to December for winter wheat, and from the 1st of February to the 1st of June for spring wheat.

Land not liable to be overflowed or swamped in winter is best sowed in autumn. Sometimes land which lies high is sowed in June, and the green is pastured during the summer and left in winter to produce a crop the next year.

Land which has been summer-fallowed is sowed from September to December.

Owing to the dryness of the year, in 1877 Mr. Simpson sowed oats in January. In this year the rain did not fall in May, as usual, after the crop was in, but came in June, doing some damage in other ways, but being the making of the spring crops.

The kinds of wheat principally sowed are the "Chilian Club" and "Imperial Redchaff." About 1¼ bushels are sowed to the acre. The harvest season extends from about the 15th of July to the 1st of October. Headers are most commonly used for harvesting, the straw being of little or no value; but farmers are beginning to become alive to the fact that grain cut with the stalk unseparated from the ear and allowed to dry in that condition matures after reaping considerably, drawing nourishment from the straw, and yielding a finer and heavier sample. Reapers are consequently coming into more use, and amongst the various reapers a certain number of the new self-binding reaping machines, which bind the crop in sheaves, as they reap it, automatically.

The binding is performed with fine iron wire, which costs very little. The wire is cut off with nippers as the sheaves are fed into the threshing machine.

Fields from which a crop of wheat has been reaped are sometimes left to themselves, without being worked again in any way, to yield a crop in the second year. This second crop is called a "volunteer crop." It springs partly from the roots of the old straw, partly from grains self sown. Ten to fifteen bushels per acre are often obtained by this means. The method is injurious to the soil, since weeds of all kinds multiply amongst the wheat, especially wild oats and Bromus secalinus, which latter is known amongst the farmers as "cheat," and is commonly supposed, erroneously, to arise from a degeneration of the wheat itself.

The official crop statistics are necessarily considerably lowered in amount by the inclusion of volunteer crops, and this fact must be remembered in drawing conclusions from them as to the fertility of the soil of the state. Sometimes volunteer crops are allowed to spring up and yield even in the third year.

Burning down Trees—The Oregonians have a curious method of felling the fir trees on their land. They burn them down, instead of felling them with an axe. The method is as follows: A two-inch augur is driven in near the base of the tree horizontally, for about 16 inches. Then another hole is driven from a point about 9 inches directly above the first, to meet the inner end of the other, at an angle of about 45°. The chips are cleared out of the holes, and some pieces of glowing hard wood charcoal are dropped into the upper hole, and falling, lodge near the angle. A draught, aided at first by a little fanning, is soon set up, and the holes are soon in a bright red glow, a small flame coming out of the upper hole. Usually the fire burns till the tree falls without further attention.

Sometimes it requires to be relit. The heart of the tree burns away first, leaving the sap all around. Trees with a thin sap burn best. Those with much resin will not burn down, as the draught becomes choked by the lamp black deposited. After a couple of day's burning it is best to enlarge the upper hole by a few strokes of the axe. The fire burns down towards the ground, scooping out a cavity in this direction, and not spreading upwards; thus felling the tree with the loss of little more timber than if the tree had been cut with an axe. A tree three feet in diameter will burn down in about four days. Trees can be felled to fall in any direction by this method; the tree falling towards the side where the holes are bored. When the tree is down, holes can be bored in a similar manner in the prostrate log at intervals and lighted, and thus the tree may be consumed and got rid of off the land.

In making a road through a forest, trees are usually felled thus by burning, and almost always so in clearing land for farm purposes.

Hogs are commonly kept by farmers, and are turned out into the stubbles as soon as the crops are off the ground. They are kept poor until the autumn. Mr. Simpson feeds his during the summer a good deal on apples, of which he has more in his orchards than he can otherwise dispose of.

The total value of farms, &c., in Oregon in 1872 is thus given in the Report of the U.S. Department of Agriculture for 1873, p. 62:—

Oregon.	Value of Farms	$22,352,989
"	Farm Implements	1,293,717
"	Live Stock	6,828,675
	Total	30,475,381

Value of above capital in Oregon per head of the population, according to census of 1870 .. $335·18

The same value calculated for the whole United States	$285·80
Value per head of the persons engaged in Agriculture in Oregon	2,300·00
Value of yearly farm productions in Oregon per acre of improved land	6·38
Same value for California	8·02
Value of farm productions in Oregon per head of population	78·06
Same value for California	89·00
Value of farm productions in Oregon per head of farming population	539·00
Same value for California	1,041·00

No doubt the next published statistics of this kind, taking into consideration the late disastrous drought in California, will speak far more favourably for Oregon as against its fertile southern rival.

FLAX AND LINSEED OIL.—The soil and climate of Western Oregon seem peculiarly favourable to the cultivation of flax. Formerly its culture was pursued mainly for the seed, some of which was manufactured into oil and oil-cake, and the remainder exported. The first linseed oil manufactured was at the date of Dec. 25, 1867, by the Pioneer Oil Company, Salem, Oregon. The capacity of the mill was 180,000 gallons per annum, but only 50,000 were made yearly, owing to the restricted market afforded by the Pacific coast. Sales in Oregon were increasing by about 8000 gallons annually. During 1872 shipments were made to the Hawaiian Islands, British Columbia, and Puget Sound. The supply of seed was obtained chiefly from Linn County, at a price of three cents per pound.

The oilmeal finds a ready sale for cattle feed.* The Willamette Valley produces flax-lint of the finest quality,

* Report of U.S. Commissioner of Agriculture for 1872. P. 451.

and of late flax has been cultivated to a considerable extent for the lint, which is of excellent quality, the fibre being both fine and strong, and of a peculiar silky gloss. With proper cultivation from 400 to 800 pounds of clean fibre are obtained per acre. Shipments of Oregon flax have been made to the United Kingdom and New York, where it was pronounced a superior article, and brought from $300 to $500 a ton. Large orders for flax have been received in consequence of these first shipments from New York manufacturers. Thus the cultivation of this textile plant has ceased to be an experiment and is a demonstrative success. It is a product which the farmer can depend upon as a change of crops, and which yields larger profits than wheat, although it requires a more careful tilling of the soil. The establishment of a manufactory of thread, twine, and linen goods is now on the point of being realized, and with it the cultivation of flax in Oregon will prove a source of lasting wealth and prosperity.* A mill for making twine for the salmon nets is just being started at Albany.

Hops grow luxuriantly, and have proved of superior quality; they give a large yield and sure crop. The yield all over the State is from 1300 to 2900 pounds to the acre. 1000 lbs. per acre is considered a good crop in Kent. It is claimed that Oregon hops contain greater tonic properties than those of California.

VEGETABLES.—A superior quality of every kind of vegetable is grown in Oregon. Potatoes, cabbages,

* Oregon flax in straw and in lint was exhibited at the Centennial Exhibition of 1876, and received medals and diplomas, "for," in the words of the judges, approved by the Commissioners, "very fine quality, extraordinary length, good in strength, good colour, superior gloss, and silky softness;" and for the oil manufactured at Salem, Oregon, from flax-seed, pronounced "of superior quality, fine colour, being clear, fine, and free from sediment, of excellent body, and high merit."

onions, turnips, vegetable-marrows, beets, carrots, parsnips, cucumbers, together with such as partake more of the nature of fruit, like tomatoes and melons, grow in profusion. The average yield of potatoes is 130 bushels per acre, but yields up to 300 are said to be obtained. Potato diseases are unknown. Enormous crops of onions are raised on beaver-dam lands, in some instances 1000 to 1200 bushels per acre. This statement applies mainly to Western Oregon, but the leading species of vegetables have also been found to thrive well in Middle and Eastern Oregon. The potato-beetle has never appeared in Oregon.

FRUIT.—Western Oregon excels as a fruit country. Fruit trees will grow from six to eight feet the first year, bear fruit the second, third, and fourth years according to variety. They thrive in the valleys as well as on the foot-hills, and up to a considerable height in the mountains, but especially in sheltered dry soil. At one of the last State fairs, yearling prune, peach, and plum trees 8 feet 4 inches high, and yearling cherry trees 7 feet high were exhibited.

Apple trees commence bearing very young, sometimes producing fine fruit the second year after having been grafted, and, if properly cultivated, are always in full bearing when four or five years old.

The fruit is large, highly coloured, and of the most delicious flavour. It is free from the apple-worm and the bitter rot, and keeps remarkably well, many of the varieties lasting through the whole year. The trees are so prolific that, unless properly cared for, they are liable to exhaust themselves by over-bearing.

Pears also grow to great perfection. The trees begin to bear remarkably young, and are exceedingly healthy and vigorous, and will live to great age, being entirely free from diseases of any kind. The trees are very pro-

ductive, and the fruit highly flavoured. Pears have been grown weighing over three pounds.

Oregon is especially adapted for the growth of cherries, plums, and prunes. The trees are perfectly healthy, grow vigorously, and bear much earlier than in the States east of the Rocky Mountains; and for size, beauty, and excellence of flavour the fruit is unsurpassed in any part of the globe. The plum and prune are entirely free from the attack of the curculio. A farmer living eight miles south of Portland sold his crop of plums and prunes to the Alden Fruit-drying Establishment at Salem for $2200, being the product of an orchard containing 3½ acres. Another gentleman sold his crop at an average of $500 per acre. Plums and prunes, especially the latter, are found to be so profitable for drying that many orchards are being planted for that purpose. Not less than 200,000 trees have been planted within twenty or thirty miles from Portland in the last three or four years. There seems to be no danger of overdoing that business, as the plum and prune-growing districts of the United States are very limited, and immense quantities of dried prunes are imported from Europe.

Trees of all varieties of apple, pear, plum, prune, cherry, &c., known in the best catalogues, can be obtained in the nurseries near Portland at very reasonable prices.*

Strawberries, currants, raspberries, and gooseberries, of

* Oregon fruits were exhibited in considerable quantities at the Centennial Exhibition; and, notwithstanding a journey of four thousand miles by express, they were in good condition, and were universally admired. They received medals and diplomas, "for," in the words of the judges, approved by the Commissioners, "a remarkably fine exhibit of fifty kinds of apples, and eight kinds of pears; all were of unusual excellence:" again, "cherries of remarkable size and excellent flavour;" "pears, ten varieties of superior excellence and size, beauty and flavour;" "apples, twelve varieties of remarkable

a fine quality, are raised in abundance. Several varieties of the hardier kinds of grapes are successfully cultivated, particularly in Rogue River Valley, where light wine is made from them. Peaches do well in the Umpqua and Rogue Valleys, but in the Willamette Valley the summer nights are too cool for their profitable cultivation.

Of wild fruits, strawberries, raspberries, gooseberries, elderberries, blackberries, and salmon berries, are found all over Western Oregon. So abundant are the wild berries that families make excursions to the mountains in the late summer to gather and dry them for winter use.

The principal wild berries of Oregon are as follows:—

Bear berry, Arcto staphylos uva ursi.
Shad berry, Amelanchier canadensis.
Barberry, Berberis aquifolium (Oregon grape).
Crow berry, Empetrum nigrum.
Wild cherry, Cerasus Virginiana.
Gooseberry, Ribes hirtellum.
„ Ribes aureum,
Raspberry, Rubus strigosus.
Salmon berry, Rubus spectabilis.
Thimble berry, Rubus Nutkanus.
Blackberry, Rubus villosus.
Cranberry, Vaccinium macrocarpon (Sallal)
Blue berry, Vaccinium Pensylvanicum.
Snow berry, Symphoricarpus villosus.
Elder, Sambucus sp.

Fruit-raising in Western Oregon already constitutes a considerable business, and promises excellent returns. In 1875, establishments were erected at various points for drying fruit, which is of the best quality, and finds a

excellence, colour, flavour, and size;" prunes, four varieties, "superior, and illustrates how well the State of Oregon is adapted to their culture;" also for "pears,one cluster of Clapp's Favourite, containing six large and handsome specimens—an evidence of the remarkable fruitfulness of that variety."

ready market in San Francisco, as well as in New York, China, Japan, South America, Australia, and other ports. Much of the fresh fruit is exported to California and the adjacent Territories. The Oregon apples, particularly, find a ready market in California, where only a much inferior article is raised. Oregon cider is excellent, and much drunk in California.

In Eastern Oregon (in the wider sense), many of the kinds of fruit grown in Western Oregon, especially apples, peaches, and grapes, do very well.

CULTIVATED GRASSES.—Timothy or herds grass (Phleum pratense) grows well in every part of the State, and is the staple article for hay. It often cuts from two to three tons to the acre, even in the foot-hills and mountains, and sometimes yields as much as five tons. The hay is extremely coarse, and more like straw in texture, but is excellent fodder both for cattle and horses. Timothy is used to sow on new lands covered with brake fern as a first crop, and it soon kills off the latter with the assistance of a little tillage. In the Crooked River Valley and other places east of the Cascade Mountains, a wild rye, which grows very tall and rank, is grown for hay. The hay is coarse, like the Timothy hay, and is bright yellow in colour, like wheat straw. It is apt to scour horses at first when unaccustomed to it, but is, like the Timothy hay, very good fodder. Red and white clover, with proper cultivation, will grow luxuriantly. Alfalfa, blue grass, red-top grass, and orchard grass, do finely everywhere.

LIVE STOCK.

The mild winter climate, the fact that the native grasses remain green during most of the year, and the ease with which cultivated grasses can be raised, together make Oregon an excellent country for raising every

kind of stock. Natural pasturage being so abundant, the general practice of the Oregon farmers is to provide fodder for only a part of the year, and to allow their cattle to roam at large during the greater part of it, and owing to the fact that a wide range of Government unappropriated land, or other unfenced land, can be had for cattle without cost, stock-raising is a profitable business. The cattle of Camp Polk homestead in Eastern Oregon range twenty-five miles. In the cold weather that is occasionally experienced in the winter, the live stock suffers sometimes, but as a rule does well enough in the open air all the year round. While stock-raising is successfully pursued in all parts of Western Oregon, the region most favourable to this pursuit is that east of the Cascade Mountains. The fact that various tribes of Indians hunted over it, kept out settlers from the district until the Indians were confined to reservations, a change effected a few years ago. Since then stock-growers have moved into it in large numbers, and the number of cattle now grazing in it throughout the year, without shelter, is estimated to be not far from 100,000 head. It is said that insects never trouble the cattle there.

The horses and horned cattle of the State represent a good average stock, and are continually improved by the importation of blooded animals from Europe and the Eastern States through private enterprise.

The stock-growers of Oregon suffer very little loss from the common diseases of live stock.

There is always a good market for beef in the towns of the State. Much of the stock east of the Cascade Range is driven great distances to other markets.

Sheep-raising is attended with very great success in Oregon, owing to the cool summers, warm winters, and green feeding during the larger portion of the year. The first lot of sheep was brought into Oregon in 1839.

The flocks of the State now number many hundreds of thousands. For many years past efforts have been made to improve the breed by the judicious introduction of animals of the best blood from various countries. The result is that Oregon wool ranks high in the market, much higher than that of California, the difference being usually six cents a pound. It is strong, even, free from burrs, and of a fine texture, and much sought after by manufacturers.*

The attention of the sheep-growers of other countries has already been attracted to Oregon, and a number of such have settled there. The wool crop of Oregon in 1876 was 3,150,000 pounds. The mutton sold in the markets of Oregon is of excellent quality.

During the last few years some Angora goats have been imported into Oregon. The animals have done very well so far.

A farmer of Marion County, Or., writes Feb. 7, 1877: "I have lived in Oregon twenty-five years, having from 500 to 700 sheep on my farm of 1000 acres for many years; and have not in all this time fed them on one ton

* Oregon wool. Medals and diplomas were awarded upon wool from Oregon, exhibited at the Centennial of 1876, pronounced by the judges and the commissioners, "Merino wool, very fine specimens, of fine fibre and good staple, very much resembling Australian wool, and giving evidence that Oregon can produce wool of very great value:" again, for merino wool "of fine staple and good strength;" "for fleece and combed wool of fine fibre, and healthy, resembling Australian, also Oxfordshire and Lancaster wool;" "for three samples of Leicester combing-wool, noticeable for long staple and bright lustre;" also "for a sample of Cotswold wool, with twelve samples improved by a series of crossings pursued for many years, of high-bred Cotswold buck on high-bred Oxfordshire down ewes, producing a combing-wool retaining the length of the original Cotswold, but with greatly increased fineness and softness, and total absence of hair."

of dry feed in winter, they subsisting alone on the green grass. Have erected no building for their protection, but simply 'coraled' them at night, summer and winter, with a common rail fence."

The best imported sheep improve in Oregon on account of its mild climate and facility of obtaining green pasturage all the winter.

The following is a condensed statement of facts respecting his own experience in growing sheep and wool in Oregon, communicated by the correspondent of the Department of Agriculture in Marion County, Mr. John Minto.* He began to keep sheep in 1849 with good common stock from Missouri. In 1858 he crossed these with south downs. In 1860 he obtained thoroughbred merinoes, partly from Vermont and partly from New South Wales. When received they averaged six pounds per fleece of very fine unwashed wool. The average per fleece of the Vermont ewes was 8¼ pounds, of the rams 11¼, ranging on grass and sheltered at night in the winter. He says: "The average number of lambs saved per 100 ewes varies with the breed; with the common stock 100 per cent. is a very fair result, though I have often saved more than that; with south downs, 120 per cent.; with Cotswold and Leicester, 100 per cent. when kept in small flocks; with merinoes, 85 per cent. In my experience, all these breeds diminish the ratio of their increase as the flock is increased; the merino in the least degree, and the longwools in the greatest. The percentage here given is what may be realized when sheep are a part of a system of mixed husbandry in Western Oregon as I have conducted it. Under such circumstances, the cost of keeping on land worth $20 per acre does not vary much from $1 per head. Such land devoted to sheep exclusively would, I think, carry 3 per acre.

* Monthly Reports of the U.S. Department of Agriculture. 1876. P. 108.

"For the past four years my wool has been sold at an average of 32 cents per pound. There is not much difference made in this market between that from common sheep and that from improved stock. Usually that of the latter commands 2 to 3 cents more, chiefly because those keeping up the improvement of their flocks are known generally to have their wool crop in good condition. The wool of Western Oregon, as a whole, always commands the highest price in the Pacific coast market.

"The following is the account of my flock for 1874: From 262 sheep, 1883 pounds of wool at 32 cents per pound, $602.64; 69 sheep sold for $1608; cash income $2210.64. Increase of flock by lambs 126, decrease by sale 69; leaving the flock of 262 increased to 319. About one-half are thoroughbred merino, and the other half grades of common stock, with a few Leicesters; 204 are ewes and ewe lambs; 49 wethers of various ages. My chief income is from the sale of rams. Good grades as well as thoroughbreds are kept for that purpose, not because the former in value for use are to be compared with the latter, but because many beginners in wool-growing cannot at first see the economy of buying the latter, though they generally come to see it with experience. Sheep, as a rule, are kept on pastures and bush lands all the year round; their chief enemies being the dogs, the cayotes, and negligent owners."

Unfortunately at present the fluke is doing a great deal of damage to sheep interests in some parts of Oregon. The first notice which I find of the appearance of the disease is in the Monthly Reports of the U.S. Department of Agriculture for 1872, p. 521, where a letter from a farmer is given complaining of his loss of stock from fluke, called "the leech" in Oregon, and staggers.

The disease seems rather common now in Western Oregon wherever sheep have access to marshy ground. Little trouble seems to be taken to keep sheep from dan-

gerous places. I saw a flock near Lebanon, in the Willamette Valley, feeding eagerly upon water-weeds in a swamp. In travelling up the country to Roseburg I heard of great loss sustained by a farmer in the Rogue River district from fluke; and of a flock of 2000 sheep which were being summered on the summit of Mary's Peak, from 3 to 4 head were dying every week of fluke, no doubt contracted on the spring pastures, and a great many in the flock were evidently diseased. There are abundance of small freshwater gasteropodous mollusks in the streams and swamps of Western Oregon to serve as hosts for the early development of the fluke.

Middle and Eastern Oregon from their dryness should be comparatively free from fluke.

Large quantities of sheep are now pastured in Middle and Eastern Oregon, and during our journey over the Cascade Mountains numerous flocks travelling eastward were encountered.

Angora goats are now raised with great success in Oregon, as in California. The ewes prove very fruitful. A farmer near Corvallis, in Blodgetts Valley, reared 14 kids from 8 ewes in his first season. He began with 11 head, 8 ewes and 3 bucks, and added 10 head to the flock in the second year, and after three breeding seasons from the commencement his flock numbered 115 head.

Though not an Indian corn country, Oregon raises very fine hogs, which are fed on roots, apples, peas, wheat, oats, and acorns. Oregon hams and bacon are selling higher in the markets of the Pacific coast than meats of the same kind in California and the Western States. Hog-raising has somewhat declined since the opening of railroads in the State, as the farmers can now do better by marketing their grain than by feeding it.

The so-called "hog cholera" has never prevailed.

Dairies.—The fine climate and fine natural pasturage of Oregon greatly favour the pursuit of the dairy business.

The cool summer nights, the abundance of cool spring water in the Western regions, the freedom from sultry and wet weather and thunderstorms during the warm season, facilitate the production of butter and cheese.

The first cheese factory was established in Lane County in 1869.

A cheese factory, a common American institution, is an establishment which makes up into cheese on a large scale milk bought by regular contract from the farmers in the district in which it is situate. Of late years dairy farms have been started in various parts of Western Oregon. In the Willamette Valley, on the bottom lands of the Columbia River, where splendid grasses grow spontaneously during three-fourths of the year, and in the Cascade and Coast Ranges, a number of well-appointed establishments are successfully carried on. There is always an active home demand for good butter and cheese, and the surplus product finds a ready sale in other markets of the Pacific coast.

EASTERN OREGON.

Philip Ritz, an intelligent settler in Walla Walla Valley, Washington Territory, thus writes of Eastern Oregon and the great Columbia plains:—

"The great Columbia plains lying east of the Cascade Mountains and west of the Blue and Bitter Root Ranges, and parallel with them, and parallel with and about 300 miles east of the Pacific coast, constitute one immense grazing ground, stretching from mountain to mountain, about 150 miles in width; and from the Klamath Lake on the southern boundary of Oregon in the south, far into British Columbia in the north, more than 400 miles in length, covered with the finest grass in the world, well watered in many places with rivers and streams, making

down from the heavily timbered mountains through the plains, and drained by the noble Columbia.

"Walla Walla City and Walla Walla Valley lie just northof the forty-sixth parallel of latitude, and in about the centre of this country. The country is composed of a series of valleys, which are drained by the Deschutes, the John Day, the Umatilla, the Walla Walla, the Yakima, the Palouse, Spokane, and the Colville.

"The soil throughout this vast region presents a great uniformity of character, being chiefly a light loam, with more or less alkali in all of it. Along and near the base of the mountains there are more loam and clay, and consequently more moisture retained in the soil than farther out in the valleys, although all the bottom lands along the streams contain a large amount of decayed vegetable matter, which, with the moisture arising from the streams, renders them extremely productive.

"The mildness of the climate and the abundance of nutritious bunch grass everywhere render this pre-eminently a grazing country. Cattle and horses are seldom fed here during the winter, even as far north as the forty-ninth parallel, but graze all winter on this dry grass, which, through the dryness of the autumn, has become cured standing, so that it is nearly equal to Timothy hay. Hence, even to the summit of the mountains on the head waters of the Columbia and Missouri we can drive up cattle in the spring from the range equal to the best eastern stall-fed beef; and many of these have not tasted a morsel of hay or straw.

"The atmosphere is salubrious, and remarkably free from miasmatic impurities. In the summer the heat is rather intense during the day, but every evening brings with it a refreshing coolness which is perfectly delicious.

"Wheat, rye, oats, and barley grow finely without irri-

gation in all our soils which contain clay or loam, and can be raised on the sandy portions of the valley with irrigation. Three years ago, when our valley contained a population of less than 6000 souls, all told, we raised about 1,000,000 bushels of grain, 700,000 of which were wheat.

"I have seen large fields of wheat average 56 bushels to the acre, and weigh 62 pounds per bushel; and have seen fields which yielded 40 to 50 bushels per acre from a volunteer crop; that is, produced the second year from grain shattered out during harvest sprouting during the fall, and growing even without harrowing.

"We generally raise the variety known as 'club,' and sow it in the fall or spring. We produce about 40 bushels of corn to the acre of the large yellow Dent variety, and it ripens nicely by the 1st of September.

"The potato is perfectly at home here, growing large, fine, and mealy. I let a neighbour have nine pounds of the early Goodrich variety last spring, from which he raised 1575 pounds. Sweet potatoes yield finely, but they are not so sweet as farther south. Turnips, beets, cabbages, tomatoes, peas, beans, onions, are all raised with ease, and in great abundance.

"Although this country has been settled but a few years, there are already a number of fine bearing orchards. I commenced here six years ago last spring on ground that had never been fenced or ploughed. After thoroughly ploughing up about five acres of ground I planted it in orchard with small yearling trees. This season I had 1000 bushels of the finest peaches that I ever saw grown, fully equal to the best Delaware and New Jersey peaches, besides large quantities of apples, pears, plums, cherries, apricots, grapes, and every variety of small fruits. Fruits of all kinds are perfect in every respect in this climate, particularly plums, the curcutio having

never been seen. I have 100 bearing plum trees; one imperial gage two years ago produced 400 pounds of delicious rich fruit, which brought 8 cents per pound in gold; last year it had about the same amount of fruit, which sold for 12½ cents per pound, gold; many other trees did nearly as well. There are a large number of orchards just coming into bearing in the country, which will, of course, bring down the price of fruit. The climate is so dry that we never see anything like mildew or rot on the grape. I had grapes last summer ripen and have a fine flavour although they lay entirely upon the ground.

"Fencing in these plains is an important item. We go to the mountains for all our fencing and lumber, from 8 to 20 miles. We can buy good fir rails in the mountains for $1.50 per hundred, with a good road to haul them out. There has been a large amount of fencing done in this country by ditching, but it soon wears down; and farmers are now building good rail-fences."*

Surplus Products of Oregon.—The following returns give an idea of the surplus productions of Oregon, and their rapid increase in the last few years in quantity:—

Export of wheat and flour from Portland and Astoria, Oregon, to Europe, from July 1, 1870, to Jan. 31, 1877:

Year.	Cargoes.	Centals (Wheat).	Barrels (Flour).	Value.
1870–71	12	189,892	—	$379,688
1871–72	12	242,759	—	531,689
1872–73	24	508,430	—	834,363
1873–74	54	999,382	97,610	2,435,694
1874–75	67	1,299,318	116,158	2,543,967
1875–76	64	1,739,231	89,529	3,606,129
Aug.'76 to Jan.'77,	59	1,275,303	103,437	2,817,720
Export of flour to China, 1875–76,			11,573	45,351
" British Columbia, 1875–76,			16,841	83,845

* Monthly Reports of the U.S. Commissioner of Agriculture for 1869, p. 384.

Export of flour to Sandwich Islands, 1875–76, 1083 bbls.; value, $5876.
Export of flour to San Francisco, July 1, 1875, to June 30, 1876, 59,870 bbls.
Export of wheat, 239,095 centals.
„ oats, 78,000 bushels.
„ flour to Puget Sound and Alaska, 1875–76, 62,152 barrels.
Export of wheat, 13,112 centals.

1876.

Export of salmon to Europe, Australia, and San Francisco:

Canned, 428,730 cases	$2,329,000
Pickled	183,000
Export of beef, canned, 33,250 cases; pickled 5429 cases, 364 barrels	350,000
Export of wool, 12,423 bales	580,000

Besides the above, large amounts of hides, tallow, bacon, hams, lard, pork, fresh, dried, and canned fruit, potatoes, immense quantities of timber, hop-poles, and staves were shipped to San Francisco.

From the lesser harbours on the coast, large amounts of timber and coal were shipped to California. The principal shipping points for this trade are Ellenburg, on the mouth of the Rogue River, Port Orford, Coos Bay, Gardiner City, on the mouth of the Umpqua, and Yaquina Bay.

Considering the number of inhabitants, these results are certainly not unsatisfactory. But, without any doubt, the aggregate productiveness of Oregon could be very much increased, even with the same population, if the farmers generally showed more skill and industry in tilling the soil. It is a fact admitted and deplored by the leading men of the State, that the average agriculturist of Oregon is of an inferior order. Much too large a number of the

farmers possess neither sufficient enterprise nor a knowledge of thorough farming, such as is practised in the Eastern States and Europe. Too many confine themselves to producing only what can be produced with the least degree of effort and skill. Wheat-growing, than which no product can be raised anywhere with less labour than in Oregon, is about all this class attempt to follow. The number of such farmers as seek their ambition in getting the most out of the soil by growing a variety of products, and testing the capacity of their land by experiments with new articles, is altogether too small. There is especially an insufficiency of skilled dairymen, fruit-growers, and vegetable gardeners. For these very reasons the opening for farmers who are accustomed to follow their business in a thorough manner, and understand the application of the teachings of science to agriculture, is particularly good in Oregon.

POLITICAL DIVISIONS, POPULATION, TOWNS, &c.

Oregon is divided into twenty-three counties, the names of which are given in the following tables, extracted from the Report of the Secretary of State of Oregon for 1876. The tables give an account of the total value of assessable property in each of the counties, and of the amounts of the industrial products of various kinds produced by each, and thus afford at a glance a trustworthy estimate of their several capabilities and grades of development.

The census of 1870 showed the population of Oregon to be 90,923.

The estimate for the year 1875 gives a population of 104,920 whites, and 16,000 Indians and Chinese. Of the whites 58,883 are males, and 46,037 females.

VALUE OF ALL ASSESSABLE PROPERTY IN THE SEVERAL
THE STATE FOR

NAMES OF COUNTIES.	Value of all Assessable Property.	Acres of Land in Cultivation.	Bushels of Wheat raised.	Bushels of Oats raised.
	$			
Benton	2,044,337	27,678	326,177	151,812
Baker	623,014	4,492	10,886	58,359
Clackamas ..	1,798,330	28,157	145,389	123,225
Columbia	254,229	2,500	2,099	2,797
Clatsop	789,707	3,568	..	5,250
Coos	1,108,197	3,694	14,795	8,050
Curry	231,389	1,366	1,931	9,145
Douglas	1,900,199	37,981	266,983	191,649
Grant	794,226	6,593	26,605	31,265
Jackson	1,364,934	22,802	13,390	127,569
Josephine	267,987	6,269	16,080	9,286
Linn	3,957,081	79,688	998,626	519,684
Lane	3,150,288	67,910	850,418	199,367
Lake	469,334	1,057	6,567	3,945
Marion	4,313,190	77,707	865,731	542,194
Polk	1,730,778	74,893	607,402	242,009
Tillamook	81,459	1,732	537	2,750
Umatilla	945,651	14,745	137,575	73,560
Union	812,251	26,623	146,283	103,437
Wasco	1,622,515	12,627	40,510	41,750
Washington ..	1,748,485	26,685	201,976	262,471
Yamhill	1,979,550	60,152	565,073	263,367
Multnomah ..	9,449,505	6,665	6,069	10,145
Totals	41,436,086	595,629	9,251,102	2,983,086

COUNTIES OF OREGON, AND INDUSTRIAL PRODUCTS OF THE YEAR 1875.

Bushels of Barley raised.	Bushels of Rye raised.	Tons of Hay.	Pounds of Wool.	Ounces of Gold Dust	Bushels of Maize.
1,743	30	4,299	77,340	..	80
31,617	1,921	7,549	17,498	3,488	550
7,657	1,383	5,922	31,604	150	1,680
6	70	2,852	3,922	..	478
..	..	1,091	4,730	..	20
822	8	2,170	10,696	836	2,211
1,866	30	357	134,694	128	1,757
28,445	50	13,038	396,981	..	22,345
15,499	87	4,791	14,443	615	25
42,986	2,846	8,865	31,337	4,493¾	26,598
3,046	50	2,988	19,249	..	5,710
13,213	645	10,148	168,893	744	5,328
13,492	479	10,036	108,575	..	3,958
1,882	130	6,860	10,840	..	155
6,582	3,904	9,262	145,297	..	2,609
24,283	..	9,141	80,033	..	1,459
1,136	30	1,740	2,457	..	..
46,166	2,891	11,969	322,366	..	8,583
33,351	479	15,699	16,489	1,954	3,017
10,685	2,080	6,983	132,760	426	2,715
1,313	250	8,771	48,672	..	2,797
2,448	..	9,605	72,949	..	2,568
1,470	..	7,297	11,177	..	2,085
289,708	17,363	161,433	1,863,002	13,028¾	96,728

INDUSTRIAL PRODUCTS OF THE

NAMES OF COUNTIES.	Number of Sheep.	Number of Hogs.	Number of Horses.	Number of Cattle.	Pounds of Tobacco.	Bushels of Potatoes.
Benton	21,513	4,153	1,757	5,393	3,522	8,782
Baker	6,341	847	2,207	12,341	1,615	5,840
Clackamas ..	9,739	3,971	1,584	6,551	1,026	55,021
Columbia ..	1,199	583	353	2,521	833	8,449
Clatsop	1,100	111	77	942	..	3,200
Coos	3,113	2,897	757	6,466	1,210	33,402
Curry	18,566	1,175	540	3,836	835	6,036
Douglas ..	94,780	11,321	3,906	11,396	90	28,013
Grant	20,355	1,365	3,879	27,597	..	1,750
Jackson	22,514	17,349	4,392	16,617	191	18,590
Josephine ..	5,917	1,918	793	4,010	635	10,275
Linn	44,061	8,217	6,537	12,556	2,529	29,014
Lane	25,664	9,491	5,524	12,634	5,229	34,166
Lake	20,148	739	2,757	22,190	15	6,155
Marion	36,640	8,221	4,896	11,363	1,288	65,143
Polk	23,616	6,300	4,219	8,528	442	16,121
Tillamook ..	902	626	330	1,311	814	2,309
Umatilla ..	80,241	2,547	7,449	28,024	1,207	24,931
Union	7,051	7,779	6,857	13,997	..	22,228
Wasco	56,577	1,323	8,175	47,946	165	20,405
Washington ..	12,758	7,663	3,845	6,232	3,880	39,198
Yamhill ..	22,484	6,562	3,551	8,496	2,566	20,658
Multnomah ..	4,321	2,462	1,581	5,519	95	68,143
Totals ..	539,600	107,620	75,966	276,466	28,187	527,829

STATE FOR THE YEAR 1875—*concluded.*

Bushels of Apples.	Feet of Lumber.	Barrels of Salmon.	Bushels of Flax.	Cases of Salmon.	Baskets of Oysters.	Number of Mules	Pounds of Cheese.	Pounds of Butter.
36,375	1,855,000	..	..	..	..	47	900	36,466
610	850,000	..	..	..	..	65	4,927	46,086
117,941	930,000	..	..	..	..	134	3,000	46,860
6,625	4,000,000	1,599	..	..	..	10	280	32,750
6,430	1,500,000	700	..	80,000	..	..	200	14,400
19,830	12,000,000	..	..	..	..	106	350	49,805
3,517	599,000	2,445	..	..	..	65	85	12,330
112,395	12,730,000	..	..	..	..	92	8,045	75,784
..	450,050	..	..	..	..	22	..	4,550
9,911	125,870	..	..	..	..	163	6,496	60,563
10,326	45,000	..	..	..	..	30	..	9,560
165,708	2,500,000	..	..	..	..	109	850	168,152
92,936	3,867,215	..	..	..	..	192	66,965	176,042
..	185,000	..	..	..	..	85	676	12,355
173,470	5,650,000	..	4,200	..	..	177	70,515	167,260
182,905	2,880,000	..	..	..	..	46	2,000	94,470
5,900	251,349	..	..	..	850	..	300	22,605
13,818	1,369,000	..	..	..	..	166	3,800	73,624
4,422	1,740,000	3	..	..	..	114	2,500	78,704
24,195	640,000	80	..	..	..	142	720	50,315
40,616	170,200	..	..	..	..	81	2,585	82,708
110,359	1,948,000	..	..	..	..	99	..	52,779
37,965	33,000,000	..	..	..	..	106	15,700	187,130
1,175,254	98,285,684	4,818	4,200	80,000	850	2,051	190,894	1,555,298

The principal centre of population is the city of Portland, the commercial emporium of the State, with an estimated population of about thirteen thousand. It is situate on the left bank of the Willamette, about twelve miles from its junction with the Columbia River. It is practically a seaport, the Willamette being navigable to this point for ocean steamers as well as sailing vessels.

To this, and the other fact, that excepting Astoria there is no other port on the coast accessible to vessels of deep draft, the growth of the place is mainly due, as it naturally becomes the receiving point for the products of the entire Willamette Valley. The site of the city is very fine. It is regularly laid out, with wide, graded, and paved streets. Its business streets contain numerous fine edifices that would do credit to any American city. The same can be said of its private residences. Its public buildings are also very creditable. Its public market-halls are extremely good. The city has good schools of various grades, several banks with a working capital of some millions, a variety of manufacturing establishments, a number of commodious hotels, street-cars, and water and gas. It has a telegraphic connection with all parts of the world, and boasts of three daily and several weekly papers. It is the terminus of two railroads, and the seat of a Steamship Company running two ocean lines of steamers (one to San Francisco, and another to Puget Sound, British America, and Alaska), as well as a line of river-boats; and two other companies for the navigation of inland waters, each of which runs a fleet of steamboats. A very active wholesale and retail trade in almost every mercantile branch is carried on. Some of the wholesale houses sell goods to the amount of millions. Within a few years the importance of Portland as a shipping point has grown very greatly. Statis-

tics of its export and import trade will be found under the head "Commerce."

Oregon City, the county-seat of Clackamas County, on the Falls of the Willamette, 12 miles south of Portland, is an important manufacturing point of 1300 inhabitants. It boasts of good schools and a weekly newspaper. A United States Land-Office is situate here.

Salem, the capital city of the State, with 3000 inhabitants, is situate on the east bank of the Willamette River, and on the line of the Oregon and California railroad, 50 miles south and 14 miles west of Portland, and about 50 miles in a direct line from the ocean. The city is built upon a beautiful prairie, having a gentle incline to the river. This prairie is frequently interspersed with a second growth of fir, oak, and maple trees, and nearly all the streets are lined with a fine growth of maples. Marion County has a court-house here, built of brick and iron, very substantial and ornamental, which cost $110,000. The State penitentiary is also placed here. It is a large structure, built of iron and brick. The State university, under the direction of the M. E. Church, has buildings built of brick, which cost $45,000. A Roman Catholic girls' school is lodged in buildings which cost $60,000. There are five common school buildings, built of wood, in which is maintained, by tax, free instruction during the entire year. There are in the city one export flour-mill, run by water with a capacity of 800. bbls of flour in twenty-four hours. One Custom flour-mill, run by steam. One large saw-mill, with a capacity of 25,000 feet per day. One linseed-oil mill, capacity 125,000 gallons annually (the only oil-mill in the State). Two sash and door factories. One furniture factory, and one chair factory. One foundry and two machine shops. One plough factory. Two waggon shops. The factories are mostly run by water.

The city has the best water-powers in the State, and never suffers from a lack of water. There are two large hotels, built of brick; ten churches, belonging to as many denominations; one opera house; one banking house; two grain elevators. The principal business houses are built of brick, and are tastefully and substantially erected. The city is distinguished for its pleasant residences, and the general appearance of substantial prosperity. The streets are at right angles to one another, and 99 feet wide. The city is lighted with gas, and has waterworks with 90 feet elevation. There are two daily and three weekly newspapers, one monthly magazine, and two job printing establishments independent of the newspaper offices. Salem had the misfortune very recently to lose by fire her woollen mills, the first built in the State, and on the Pacific coast; the loss was about $75,000; they will probably be rebuilt soon. Building lots are worth from $300 to $1000 for the erection of residences, and $1000 to $3000 for business purposes.

The fine new State House is partly completed and occupied. This building is sumptuously constructed and furnished. I was shown over it by Governor Chadwell. The rooms are panelled with specimens of the most beautiful figured woods produced by the State, especially remarkable amongst which is the Oregon maple. The supports of the banisters of the main staircase are of the wood of the "big trees" of California. Governor Grover thus refers to the building in his Message of 1876:—

"Estimating the future work to be done with the same economy and success as the past, the entire capital building can be finally completed, according to the original plans and specifications of the architects, for an additional appropriation of $100,000, amounting to a total cost of $325,500. The building is 264 feet in length, wings 80 feet in width, with transverse sections 160 feet in depth, three stories high, above a basement of heavy stone walls.

The main tower is to rise 180 feet from basement. The building to be ornamented with Corinthian porticoes, supported by six iron columns each. In this building, besides the large quantities of stone and iron, five millions of bricks have been used. The architect's estimate of the cost of this structure exceeded a half-million dollars. It is unusual that buildings of any class, and especially public buildings, are constructed within the estimated cost. The expense of this public work will fall nearly two-fifths short of the estimate."

Albany, eighty-one miles south of Portland, also on the Willamette, is the liveliest and most progressive town of the Willamette Valley. Being situate in the very heart of an extensive and most fertile farming country, it is an important shipping point for domestic products of every description. The Santiam and Albany Canal furnishes unlimited water-power, turning the wheels of several factories. Three weekly newspapers are published here. The town, which has 4000 inhabitants, is growing rapidly, and building is going on fast. Some first-class residences in the outskirts have just been built by leading merchants.

Astoria, the county-seat of Clatsop County, is situate twelve miles from the mouth of Columbia River, which gives it undisputable advantages as a shipping and commercial city; it has a fine water-front and good landing facilities. At present it numbers about two thousand five hundred inhabitants, but is rapidly growing and gaining in population, more so than any other town in the State. A weekly newspaper is published, and many of the principal salmon and beef canneries are situate here.

Of the other towns on the Willamette, Harrisburg, Corvallis, Junction, and Eugene City are the largest. The last-named point is the head of navigation on the Willamette.

On the coast there are but few small towns, as New-

port, on Yaquina Bay; Empire City, on Coos Bay; Port Orford and Ellenburg, the latter at the mouth of Rogue River. All of these are small shipping points, accessible to light-draft vessels.

Roseburg, the southern terminus of the principal railroad of the State, is the leading town in the Umpqua Valley, with a few hundred inhabitants.

Jacksonville is the largest town in Rogue River Valley, with an active business, and between 1000 to 2000 inhabitants.

The principal centres of population east of the Cascade Mountains are the Dalles and Umatilla, on the Columbia; and, east of the Blue Mountains, La Grande, Union City, and Baker City, in Grande Ronde Valley.

MEANS OF COMMUNICATION.

Oregon does by no means possess all the channels of communication required for the better settlement of the country and development of its resources. What the State stands most in need of is a direct connection by rail with the Eastern States by the Pacific railroads. The want of such a connection has been, and still is, the greatest obstacle to its more rapid growth; but, though not possessing all its needs, Oregon is yet better provided with natural and artificial means of communication than other new States.

Navigable Watercourses. — The principal river is the Columbia, which is navigable throughout the year to the Willamette, 100 miles from its mouth, and thence eastwardly, with two interruptions at the Cascades and the Dalles, where there are railroad portages to Priest's Rapids in Washington Territory, 396 miles from the ocean, and on its tributary, the Snake River, to Lewiston in Idaho, 470 miles from the ocean.

The Willamette River is navigable for ocean steamers and sailing vessels to Portland, 112 miles from the sea. At Oregon City it falls perpendicularly over a ledge of rocks for about forty feet. These falls formerly proved an absolute obstruction to direct navigation. A passage around them was first secured by a portage on the Oregon City side. Subsequently locks were constructed on the opposite side, at a cost of several hundred thousand dollars, allowing of the direct passage through of steamboats. Hence steamboats now navigate the river as far up as Eugene City, 138 miles from Portland, during high water, and as far as Salem (51 miles) during the whole of the year. Three lines of steamboats were competing during the winter of 1874 and 1875 for the traffic of the Upper Willamette. Small boats of a very light draft have recently been introduced, with which it is hoped to navigate the river all the year round as far as it is ever navigated.

The Yamhill, Santiam, and Tualatin Rivers are also navigable for some distance during high water.

The steamships of the Oregon Steamship Company maintain a weekly communication between San Francisco and Portland, and a monthly one between Portland and the towns on Puget Sound, Victoria in British Columbia, and Sitka in Alaska, formerly Russian America.

Railroads.—It was natural that the first railroads in Oregon should be built in the Willamette Valley, where they were actually needed; for, owing to the regular interruption of navigation during the harvest months, the bulk of its vast products could not previously be marketed at the most favourable time of the year. It is not too much to say, that the opening of a railroad through the valley marked a new epoch in the material history of Western Oregon, and that to it most of the relatively great progress of that region during the last

few years is largely due. But for this artificial highway, the export of the staple products could not have possibly assumed its present large proportions. The railroads built so far in the State, while of much benefit to the inhabitants, have proved a source of great loss to those who furnished the money to construct them; repeating in this the all but general experience with new railroads in other parts of the Union.

Of the two roads now in operation, the Oregon and California Railroad is the more important. It is completed from a point directly opposite Portland on the Willamette, to Roseburg in the Umpqua Valley, for a distance of 200 miles. It follows the east bank of the Willamette, and touches all the leading towns in the State. From Roseburg, a well-managed stage-coach line runs to Redding in the Sacramento Valley, the present northern terminus of the California railroad system. It is hoped that the latter will eventually become connected with that of Oregon by the completion of the Oregon and California Railroad.

The other road, the Oregon Central, also commences at Portland, within the city proper, on the west side of the river. After running for some distance in a westerly, it turns in a southerly direction. Only 50 miles of it (to the Yamhill River) are completed and operated at this time. It is intended to extend it in due time to Astoria in a north-westerly, and in a southerly direction to a junction with the Oregon and California, at a point a little over one hundred miles south of Portland, where a new town, named Junction City, has already sprung up. From the Yamhill to this point it will traverse a very rich country.

Various railroad lines are projected, to connect Oregon with the Pacific roads and the railroad system of the Eastern States.

A railroad to pass from the neighbourhood of Corvallis to Yaquina Bay on the Pacific coast through the Coast Range and along Yaquina Valley, is now in course of construction, and a few miles are already graded in the neighbourhood of Philomath.

The Surveyor-General of Oregon speaks in glowing terms of the prospects of this new enterprise in his Report to the United States Commissioner of the General Land Office for 1874. He says: "This road will tap the very heart of the Willamette Valley, and with its connecting lines throughout the State, and perhaps with one of the great transcontinental trunks of railway, will revolutionize the commerce of the country and open the floodgates of an inmeasurable prosperity."

Common Roads.—The waggon roads of the State are good. Several roads over the Cascade Mountains connect Western with Eastern Oregon.

COMMERCE AND INDUSTRY.

Commerce.—Till within a few years, Oregon was commercially altogether dependent on California. It had no self-sustaining commerce of its own, but drew its supplies from San Francisco, and sent in return its own products, such as wheat, flour, oats, ham, bacon, fruit, wool, salmon, &c., which, on being re-exported, passed as the productions of California in other markets. But, with the introduction of railroads, the commerce of Oregon entered upon an era of independent development. Many supplies are still drawn, it is true, from San Francisco, instead of being directly imported from the great commercial marts of the East, but the great growth of the export trade has led to steadily increasing direct importation from foreign countries. Oregon now ships

wheat (as once before mentioned), dried fruit, flour, salmon, and beef, directly to England, flour and salmon to China and the Sandwich Islands, timber to South America and Australia; and draws, in return, supplies of mercantile wares from those countries. Of special promise is the trade with England and China. While in 1871 only two vessels were chartered to load for China, at present there are five engaged in the China trade. In the shipping season of 1871–72, only twelve vessels were loaded for England; but the number increased in the season of 1875–76 to sixty-five vessels; from August 1, 1876, to January 1, 1877, the number of vessels was sixty-two. The direct trade with China, the Sandwich Islands, and Australia, is likewise growing.

But the commerce of Oregon will doubtless attain its full development only when direct railroad connection between the harbours of the Atlantic coast and the waters of the Columbia shall be attained. Then only will Portland become entirely independent of San Francisco. There is scarcely any doubt that a large portion of the trade of the Pacific coast with China must eventually fall to Oregon, as the chief article of export to China from the Pacific coast for a long time to come will be flour; and of this Oregon can supply a better and cheaper article than California, as its soil is excellently adapted to the raising of wheat, and as it possesses greater water-power and cheaper fuel than its neighbour, and does not suffer from droughts. The fact, too, that the mouth of the Columbia is several days' sailing nearer to the chief Chinese ports than the Golden Gate, will help to bring about a diversion of the trade with China to Oregon, whenever the means of direct transportation to the Eastern ports by rail shall be secured.

At high water ships of the greatest draft, and at low water vessels drawing seventeen feet, can easily come up

the Columbia and Willamette to the well-built wharves of Portland.

A cargo of wheat can be shipped from Portland to Europe for less money than from points inland west of the Mississippi.

Considerable injury has been done to the commerce of Oregon by exaggerated statements of the dangers connected with the bar at the mouth of the Columbia.

The constant increase of the shipping business at Portland and Astoria affords the best evidence that the bar causes no serious obstruction to navigation. This increase will be clearly shown by the following tables, compiled from the reports of the United States Custom-houses at Portland and Astoria:—

ENTRANCES AT PORTLAND FROM FOREIGN COUNTRIES.

Year.	American Vessels.		Foreign Vessels.		Totals.	
	No. of Vessels.	No. of Tons.	No. of Vessels.	No. of Tons.	No. of Vessels.	No. of Tons.
1870	34	19,581	13	7,468	47	27,049
1871	48	21,351	10	5,334	58	26,685
1872	26	11,946	14	9,140	40	21,086
1873	21	10,302	33	19,143	54	29,445
1874	20	11,766	56	34,063	76	45,829
1875	14	7,724	19	12,090	33	19,814
1876	18	9,102	63	47,780	81	56,882
			CLEARANCES.			
1870	50	22,581	8	4,241	58	26,822
1871	56	29,261	22	12,795	78	42,056
1872	38	19,946	15	9,372	53	29,318
1873	34	19,444	36	23,476	70	42,920
1874	28	17,076	71	42,439	99	59,515
1875	58	22,988	31	27,691	89	50,679
1876	30	15,444	75	61,173	105	76,617

These figures do not, of course, include the coasting

trade to and from the lesser harbours of the coast, in which a large number of smaller vessels are employed, carrying mainly coal and timber to the Californian markets. The principal shipping points for this trade are Coos Bay, Yaquina Bay, and the mouth of the Umpqua.

The Governor of the State, in his message to the Legislature, delivered. Sept. 16, 1874, says: "The value of our exports has reached a sum certainly exceeding ten millions of dollars. I estimate the export value of our wheat and flour at nearly four millions gold; of oats, other grains, and fruits, at one million; of wool, hides, meats, cattle, and horses, at two millions; of salmon, at one million five hundred thousand; of timber and coal, at one million; of gold, silver, and iron, at one million five hundred thousand. This exhibit, for a population of a hundred thousand people, is almost without a parallel." *

INDUSTRY.—Oregon is, like all the newer States of the Union, mainly an agricultural country, with a limited development of industry. A good beginning has, however, been made in a number of industrial pursuits.

The late treasurer, in 1876, reports that nine different foreign insurance companies have each deposited in the State treasury $50,000 worth of United States registered bonds as security to policy holders, or in the aggregate $450,000.

Measured by pecuniary results and the capital employed, the salmon fisheries and canneries appear to be the most important branch of industry. In 1875, twelve canneries were in operation on the Columbia River, in which 231,300 cases of canned salmon, each case containing either 48 one-pound cans or 24 two-pound cans, and large quantities of pickled salmon, were put up. In 1876, 428,730 cases were put up in seventeen canneries.

* It amounts to exports of a value of 20*l.* per head for every man, woman, and child, in the State.

In the present season twenty-nine canning establishments were in operation on the Columbia River, of which eleven are situate at Astoria, one on the Willamette, and one on the Rogue River. More than 4000 men and 450 fishing boats and several steamboats are employed in this industry: the capital employed in the business will not fall short of two millions of dollars. It is estimated that 600,000 cases of salmon will have been put up this year.

Two years ago several proprietors of salmon canneries began to put up beef in cans, and ship it to England. This experiment has met with success, and it seems that at no distant day this branch of industry will be equal to the salmon industry. In 1876, 33,250 cases of canned beef were put up.

Next in importance is the manufacture of woollen goods, which has attained a high degree of perfection. There are at present four wool-mills in operation in different parts of the State. The most important are situate at Salem, Oregon City, and in Brownsville, south-east of Albany. The cassimeres, flannels, and blankets manufactured in these establishments are of a very superior quality, and find a ready market both at home and abroad: especially is this the case with the blankets manufactured at Oregon City, which are sent to New York, where they command the highest price.* The wool-industry of the State consumes about 1,250,000 pounds of raw material, of which 250,000 are imported. The manufactured goods represent a value of not far from $1,000,000.

Many fine flour mills, worked by either water or steam

* Oregon woollen goods manufactured in Oregon, city of Oregon material, were exhibited at the Centennial Exhibition of 1876, and awarded medals and diplomas, "for," in the words of the judges, approved by the Commissioners, "fancy cassimeres and blankets; for fancy cassimeres, substantial in fibre, of excellent finish, and good designs; also for blankets of good quality."

power, are already in operation in the State (their number was estimated to be eighty in 1872), and their increase keeps pace with that of the wheat product. The largest are located at Milwaukee (near Portland), Oregon City, Salem, Albany, Jefferson on the Santiam, Lebanon twelve miles east of Albany in Linn County, Eugene City, Springfield, and McMinnville. They are capable of turning out from 300 to 500 barrels of fine flour (of 196 pounds each) a day. In 1873 the first attempt was made to export Oregon flour to England. The experiment was very successful.

MARKETS.—The products of the Willamette Valley are carried out of the country by steamers on the Willamette River and the railroad running its entire length; freight on wheat from Salem to Portland is 5½ cents per bushel; a cargo of wheat can be shipped from Oregon to Liverpool, England, for less per ton than from Chicago, the great market of the west. From September 16th, to December 21st, 1874, forty-one vessels carried out of the Columbia River an average of 35,000 bushels each of wheat to the following foreign ports:—

	Wheat.	Flour.
	bushels.	barrels.
Liverpool	136,616 ..	12,508
Queenstown	780,638 ..	16,501
Cork	306,141 ..	784½
Hong-Kong	.. ..	6,871
Honolulu	106 ..	355
Rio de Janeiro	.. ..	10,891

Equalling 1,439,096 bushels of wheat. The prospective rapid growth of the country, and the prosecution of the present projected internal improvements, will furnish a good home market for such products as are unprofitable to export.

The timber interest of Oregon is already important.

In San Francisco, as well as in China, South America, and the Sandwich Islands, the demand for Oregon timber is very large, as it has been found most valuable for ship-building and other purposes generally. Saw-mills exist all over the State. At different points on the Columbia and Willamette Rivers, at Coos and Yaquina Bays, and Port Orford, large mills have been erected, each of which can turn out 75,000 feet of sawn timber per day, which is loaded directly on vessels from the mills. The saw-mills at Coos Bay ship about 24,000,000 feet, and the total export of the State at large is estimated at 100,000,000 feet annually. A good deal of the timber product of the State is manufactured, within its limits, into doors, sashes, blinds, and for other domestic purposes. Very superior furniture is made from it. The number of saw and planing mills in the State was estimated to be one hundred and seventy in 1872.

The following account of the timber consumption of California gives incidentally a good idea of the present condition and future prospects of the Oregon timber trade. It is extracted from the Report of the U. S. Commissioner of Agriculture for 1875:—

"The timber consumption of San Francisco and the western part of California is increasingly heavy. Pope and Talbot, of San Francisco, a firm well acquainted with the statistics and tendencies of the timber trade of the western coast, report as received in 1874 from Washington territory, Oregon, and the California coast, 253,251,063 feet, and in 1873, 203,329,441 feet, besides shingles, laths, posts, ties, spars, and other miscellaneous products."

The sources of supply of the different kinds of timber are as follows:—

"'Puget Sound or Oregon pine,' 2 or 3 per cent. from the California coast, 10 per cent. from Oregon, and the

remainder from Washington Territory. Spruce: 40 per cent. from California, 50 from Oregon, 10 from Washington. White cedar: nearly all from Coos Bay, Oregon. Red cedar is beginning to come in from Washington. The red wood is all from the California coast, and the laurel mainly. The 'hard wood' comes from Oregon, but there is nothing that would be called hard wood on the Atlantic coast. Sugar-pine is obtained principally from the headwaters of the Sacramento River. There is a small portion that comes from the Sierra Nevada Mountains.

"Piles, ship-knees, poles, bowsprits, &c., are from Washington. Spanish cedar and rosewood are brought from Central America. In addition to the shipments to California, about 80,000,000 feet of lumber is shipped from Washington, and 20,000,000 feet from Oregon and California ports to the southern coast of California and foreign countries."

Ship-building has been followed for some time with great success at different points on the Oregon coast, and a number of fine vessels built there are now afloat.

In 1876 the Oregon iron works at Alcana, near Portland, built a steam revenue cutter for the United States Government.

Not far from the iron mine near Oswego, already described under the head of mineral resources, a furnace and a foundry on a large scale, erected at a cost of $100,000, have been in operation for some time. It is the intention of the owners to add a rolling mill to their establishment. The pig iron turned out by the furnace is of superior quality, and is sold in the home market as well as at San Francisco, where it is deemed equal to Scotch iron. Some very fine castings have been made at these works. Charcoal made from the timber in the immediate vicinity of the works, is delivered at nine

cents per bushel, but it is believed can be made still cheaper. Several other foundries, as well as machine shops, are carried at other points.

Near Oregon City is a paper mill, producing about 2000 pounds of straw and other paper daily. An oil mill at Salem produced 150,000 gallons of linseed oil in 1873. Flax mills have been erected at Salem and Albany, with a view to the eventual manufacture of linen.

There are also some establishments for the manufacture of wooden ware.

Hemlock and oak bark being obtainable in inexhaustible quantities, a number of tanneries are in operation, but they do not as yet supply the domestic demand.* A good deal of leather is still imported, and at the same time large quantities of raw hides are exported.

Several establishments for the production of various agricultural implements are in existence, but they also are insufficient to supply the home demand. Most of the machines and implements in use are imported at great cost.

A comparatively new branch of industry is the drying of fruit and vegetables by machinery, and in the canning of the same. At Salem, Oregon City, Albany, and McMinnville, driers of the Alden patent, and at East Portland, Beaverton, and other places, of the Plummer patent, are in operation, which turn out the finest quality of dried fruit and vegetables. Canning establishments are erected at several places. The Oregon canned fruit and vegetables are mostly exported to California, where they command the highest market prices, owing to their

* Harness leather manufactured in Oregon was exhibited at the Centennial Exhibition of 1876, and awarded a medal and diploma, "for," in the words of the judges, approved by the Commissioners, "skill and workmanship in the preparation of the hide and the manufacture of the leather."

fine flavour and excellent quality. At no distant day the drying and canning of fruit and vegetables will be one of the most important industries in the State.*

Another method of utilizing the fruits of Oregon for shipment for every port has been invented, and successfully applied at East Portland, Oregon. It consists in evaporating the water from fruit juices, compressing the residue into sheets containing all the essential properties of the fruits, and rolling them up like cloth, in which condition they remain unchanged in any climate or by lapse of time, until again dissolved in water, when they return to their original condition.†

The foregoing shows that the industry of Oregon, taken as a whole, is still in its infancy, and that the country holds out strong inducements to industrial enterprise in many directions. That two essential elements of profitable manufacturing—viz. cheapness and abundance of raw material and of fuel—are found there, has already been incidentally mentioned. But another, of equal if not greater importance, also exists in the State; viz. abundant water-power. No part of the Union is better supplied with natural power than Oregon. The falls at Oregon could supply sufficient power for the entire industry of a community with a larger population than that of the whole State. This fall is equal to over a million horse-power, and is capable of great extension with little expense.

* Dried fruits as prepared in Oregon for the market were exhibited at the Centennial Exhibition of 1876, and received medals and diplomas, "for," in the words of the judges, approved by the Commissioners, "fine flavour, colour, and condition."

† Fruit juices thus prepared were exhibited at the Centennial of 1876, and awarded medal and diploma, "for," in the words of the judges, approved by the Commissioners, "exhibit of condensed apple cider, butter, and jelly, well preserved, novel, and useful."

The water-power of Salem ranks next to that of Oregon City. It is obtained by means of a canal leading the waters of the Santiam River into the bed of another smaller stream. A mile east of the town, the channel of the latter is divided by races, and approaches the place by two lines. On each line there are three falls of from fifteen to twenty feet. It is estimated that the power thus provided is equal to that of Lowell in Massachusetts.

There is also considerable power at Albany, Harrisburg, and Eugene City. At Springfield, three miles above Eugene City, great power is furnished by the middle fork of the Willamette. The two other forks of the Willamette also afford vast power. The Tualatin River likewise supplies great power. On the Yamhill, La Creole, Lackiamute, Mary and Long Tom Rivers, considerable power is obtained.

The water-power on the Upper Columbia is also very important. At the Cascades, 65 miles from Portland, the river has a fall of 40 feet, from which power could be supplied to mills for miles on each side of the river. A number of tributaries of the Columbia, as the Sandy, Hood, and Deschutes Rivers, and Mill Creek, also furnish power. In Southern and South-eastern Oregon, power is obtained at Ashland and on Link River, connecting the Upper Klamath with the Lower Klamath Lake. The power on the latter is supposed to be equal to that at Oregon City.

PROGRESS OF OREGON IN DEVELOPMENT.

The 'San Francisco Bulletin' thus spoke of the progress of Oregon in 1869:—*

"It is cheering to notice the rapid strides that our sister Pacific State is making in the direction of healthy

* Reprinted in the Monthly Report of the United States Department of Agriculture for 1871, p. 229.

and permanent prosperity. The construction of a trunk railroad through her central valleys from the Columbia to the California line soon to be connected with the Pacific Railroad, both by way of Idaho and this State; the multiplication of manufactures and mineral products; the enlargement of home commerce; the greater amount of land under cultivation; the growth of towns and enhancement of real values; the quickened demand for land and influx of immigration; these are all the circumstances which the telegraph reports daily, and which make up a record of substantial progress. The fact is that Oregon, in common with California, is just entering on a career of such prosperous development as marked the history of several of the Mississippi States in the decade following 1850. This was delayed twenty years by the remoteness and isolation which have been ended at last, and by the completion of the Pacific Railroad and the construction of local branches.

"There is no more orderly and economical State in the Union than Oregon. All its growth has been gradual and healthy, for while it possesses great mineral resources, it has never been demoralized by great mining excitements. With an area larger than that of Pennsylvania and New York combined, half of which is adapted to agriculture and grazing purposes, and the remainder valuable for its famous timber, it has yet scarcely one hundred and twenty thousand inhabitants, and not over six per cent. of its arable lands has passed into private ownership, while hardly two per cent. is under cultivation. Most of its arable land is in a series of valleys, well watered, fertile, and picturesque. It is a great wheat State. Its apple orchards are not equalled anywhere in the East, and its climate favours a greater variety of products than any of the Northern States. It has mines of iron and coal, as well as of gold, silver, copper, and lead."

The United States Commissioner adds:—

"It is evident that California and Oregon are to be competitors in stimulating emigration westward, and the gain of one will be measurably the gain of the other. Oregon unquestionably has the agricultural, the commercial, and the mineral resources to make her one of the most prosperous States in the Union; her climate is inviting, and her scenery is in some respects superior to that of California."

The following facts extracted from the official returns show the progress attained by Oregon in various directions, and its rate:—

The white population was in 1850, 12,013; in 1853, 33,324; in 1857, 43,000; in 1860, 53,465; in 1870, 90,923; and in 1875, 104,920. It has thus increased more than eight and a half fold in twenty-five years.

The total value of taxable property of the State was in 1858, $22,824,118. It declined slightly until 1861, when it was rated at $19,886,125. Since that period it has increased every year gradually until 1869, when it was $29,587,846; then by a rapid stride to $34,744,459 in 1870. It is given for 1875 at $41,436,086.

The total wheat-produce for the last seven years is estimated as follows:—

Year 1869	1,750,000	bushels.
„ 1870	2,270,000	„
„ 1871	2,292,000	„
„ 1872	2,406,000	„
„ 1873	3,127,000	„
„ 1874	..	
„ 1875	4,500,000	„

showing a steady increase of production.

The increase in the numbers of all kinds of cattle is shown in the following table. The returns of 1869 ap-

pear to be erroneous in the matter of cattle, sheep, and hogs. Excluding these, there has been a very considerable increase of all denominations except mules, and these have decreased no doubt because of the advancing construction of roads suitable for waggons, so that pack animals are not so much required as formerly.

TOTAL NUMBERS OF STOCK OF VARIOUS KINDS IN OREGON IN SUCCESSIVE YEARS.

Years.	Horses.	Mules.	Cattle, Oxen, and others.	Milch Cows.	Sheep.	Hogs.
1869	70,000	..	175,000?	90,000?	500,000	160,000
1870	73,400	4,200	102,000	62,400	419,200	148,500
1871	78,500	4,300	109,100	66,700	486,200	158,400
1872	80,800	4,000	116,700	70,000	534,800	163,100
1873	86,400	3,700	123,900	73,500	561,500	171,260
1875	91,400	3,700	137,600	80,900	710,500	181,500

According to the returns contained in the 'Monthly Reports of the United States Department of Agriculture for 1876,' pp. 3, 4, 5 et seq., Oregon is one of the States of the Union showing the largest increase in numbers of cattle and milch cows, and also in that of horses and sheep in the year 1876. Horses have increased 7 per cent.; milch cows, 6; cattle, 9; sheep, 12; and hogs, 4; mules, 1.

According to the Report of the Secretary of State of Oregon, all the counties of the State show an increase in the value of real and personal property between the estimates of 1858 and 1873, excepting the counties of Benton, Josephine, and Polk, in which there has been a decrease. The largest increase is in Multnomah County, and amounts to more than one-half of the total increase in value of the entire States.

LANDS.

Reference has been made in another place to the "Donation Law," under which large grants of land were gratuitously made to settlers in Oregon. This act of Congress, while of great benefit to the State at the time, by attracting considerable immigration, has since proved a positive detriment to it; for the most easily cultivated lands in Western Oregon, the rich prairie lands of the Willamette Valley, were taken up under it, and have ever since remained in large tracts in comparatively few hands, and such hands too, to a great extent, that are either too indolent to cultivate all they possess, or unwilling to sell what they do not cultivate to those that would make their spare acres productive. But for this law much of the land in question would still be the property of the United States Government, and as such within the reach of new settlers under the homestead and pre-emption laws. As it is, both the public and railroad lands of Oregon consist mainly of timber land, which is of course less easily brought under cultivation.

In the Willamette Valley farms containing from 80 to 160 acres, with from 15 to 20 acres under cultivation, and from 8 to 20 miles from the railroad, can be had at from $800 to $1400 gold. Farms, in no better state of cultivation, cost, according to situation, soil, and nature of improvements, from $10 to $30 gold per acre. Well-improved prairie farms in the best localities can be bought at from $30 to $60 gold per acre. In the immediate proximity of the larger towns of the northern part of the valley land commands a still higher figure.

It is astonishing to the traveller in Oregon to observe the extent to which all flat bottom lands, even in remote valleys, have been sought out and taken up by settlers. Most of the wild land in Western Oregon now for sale to

the settler is situated in the foot hills of the Cascade and Coast Ranges. Competent judges claim that the greater part of these lands is of the best kind, and equal in productiveness to the best prairie land. Destructive fires, sweeping over the foot hills, have in many places destroyed the timber so effectively that it will cost but little to clear the ground entirely if frugal, and industrious men with sufficient means for a start may be sure of obtaining on these lands an independent livelihood within three or four years.

Although surveys have been carried on for many years, vast tracts of public lands still remain unsurveyed. According to the United States Land Office Report for 1875, of the 60,975,360 acres of land of which Oregon consists, only 16,819,735, or about one-fourth, had been surveyed up to June 30, 1875, whilst 44,115,972 acres remained to be surveyed.

More Government land is, however, now in the market than is likely to be taken up for a long time to come. There are five United States land offices in the State, situate respectively at Oregon City, Roseburg, the Dalles, La Grande, and Pinkville, which afford the usual facilities to settlers wishing to avail themselves of the homestead or pre-emption laws. Under the homestead law every head of a family, male or female, or single man over twenty-one years, a citizen of the United States, or one who has formally declared his intention to become such, can enter, on payment of registry fees, ranging at from $7 to $22, 80 acres of any lands reserved by Government within the limits of railroad or waggon road grants, excepting lands bearing gold, silver, cinnabar, or copper; and 160 acres, if the claim be situate outside the limits of grants. After five years' bona fide residence upon and improvement of the land by the claimant, he receives from Government a regular title to it. Under the pre-

emption laws persons possessing the same qualifications as claimants under the homestead law, not being in possession of 320 acres in any of the states or territories of the United States, may "enter" at a land office, on payment of a fee of $2, and establish a pre-emption right; that is, a right to purchase a tract of 160 acres, either within or without the limits of a railroad grant, at $2.50 per acre in the former, and at $1.25 per acre in the latter case. Where the tract was offered for sale by the Government, the land must be paid for within thirteen months from the date of settlement, otherwise within thirty-three months. Thus the alien settler, by becoming a citizen of the United States, can become possessor of 320 acres at most of the United States' lands.

The Surveyor-General of Oregon is of opinion that settlers will in future go East.

In the Report of the Commissioner of the United States General Land Office for 1876, he writes to this effect:—"The majority of emigrants come with the expectation of settling on the public lands. The principal area of the field work of this office will henceforth lie east of the Cascade range. There is not a great deal of unsurveyed land in Western Oregon for which there will be any demand for years to come, and the civilization and culture which have overspread the hills and prairies and crept into the mountain passes of the fertile regions on this side are now pushing outward and over the great mountain barrier into the fruitful valleys and along the grassy uplands of Eastern Oregon."

But there are several other classes of wild lands which can be purchased by the settler whether he be an American citizen or not. These are "school lands" and lands belonging to railroad or waggon-road grants.

The land of the State is surveyed by the Government officers in a series of squares by means of parallel lines

run at right angles to each other. Each square is one square mile or 640 acres in area, and is termed a "section." The sections are grouped into large square areas of six miles in length in the side, and thus containing thirty-six sections, which are termed townships.

In each township two sections are set apart as school lands, that is to be sold for the benefit of the school funds of the district. A certain further number of sections of land in the various counties have been granted to the State by the United States as an endowment for the University of Oregon and its Agricultural College. These school lands are sold to applicants at prices varying with their quality. A return of the sales effected from September, 1874, to September, 1876, is given in the Report of the Commissioners for the sale of school lands in Oregon for 1876, and gives a criterion of the prices realized by wild land in the various counties.

In the La Grande district, 4133 acres of State and school land, situate in Baker, Union, and Umatilla Counties, sold for $1.25 per acre.

Of land forming part of the endowment of the State Agricultural College, 1314 acres in the counties of Grant, Jackson and Lake sold at $2.50 per acre.

Of University land in Benton, Clatsop, Lane, Marion, Multnomah, Polk, Wasco, Washington, and Yamhill Counties, 2385 acres sold at an average price of $1.62.

28,805 acres of common school land situate in nineteen different counties, sold at an average price of $1.12.

Certain grants of land have also been made to the State by the United States for various purposes of internal improvement, and are known as State lands. The office for their sale is at Salem.

In 1875–76 as above, 4995 acres of State land in Columbia, Douglas, Jackson, Lake, Multnomah, Wasco, and Washington Counties, sold at an average price of $1.90.

Thus in all, in the two years 41,633 acres were sold by the State at an average price of $1.33 per acre.

Besides these lands there are for sale those belonging to railroad and waggon-road grants. These are lands given by the United States to companies which undertake to construct railroads or waggon-roads within the State, in order to aid them, or pay them for the enterprise, by the funds which they derive from selling the lands. The alternate sections all along the lines of road are given to the companies, and similar sections for varying distances on each side of it. In most instances much of the best land traversed by each road has been taken up by settlers before the road is made. The company then receives sections elsewhere in lieu of those which are thus already private property.

There are in Oregon, as appears from the United States Land Office Report for 1875, two land-grants of this kind belonging to railways, and five grants belonging to different waggon-roads.

The largest grant is that of the Oregon and California Railroad. The grant comprises the alternate sections within twenty miles on each side of the road to the extent of 12,800 acres per mile of road. The estimated amount of land which the company will receive under the grant is 3,500,000 acres, and the amount certified or patented up to June, 1875, was 221,896·30 acres.

The grant of the Oregon Central Railroad is of similar nature. The estimated amount which will be received is 300,000 acres.

The companies sell their lands on very liberal terms at the low price of $1.25 to $7 per acre, payable in United States currency. The purchaser can pay cash, in which case he will be allowed a discount of ten per cent. on the purchase price; or he can have ten years' time in which to make up the sum by small annual payments, with

interest at the rate of seven per cent. per annum. In this latter case the purchaser pays down one-tenth the price at the time of purchase. One year after the sale he pays seven per cent. interest on the remaining nine-tenths of the principal. At the close of the second year he pays one-tenth the principal and one year's interest on the remainder, and the same at the end of each successive year, until all has been paid at the expiration of ten years.

The waggon-road grants in the State are as follows:—

OREGON CENTRAL MILITARY ROAD COMPANY.

Estimated amount which the company will receive under the grant	720,000	acres.
Amount certified or patented up to June, 1875	361,327·43	„

THE DALLES MILITARY ROAD COMPANY.

Estimated amount under grant	556,800	acres.
Certified	126,910·23	„

WILLAMETTE VALLEY AND CASCADE MOUNTAINS MILITARY ROAD COMPANY.

Estimated amount under grant	*460,000	acres.
Certified	107,942	„

CORVALLIS AND YAQUINA BAY WAGGON-ROAD COMPANY.

Estimated amount under grant	76,800	acres.
Certified	57,506	„

COOS BAY MILITARY ROAD COMPANY.

Estimated amount under grant	50,000	acres.
Certified	29,482	„

* The amount of acres is thus given in a series of successive Reports of the U.S. Land Office. Mr. Wallis Nash, however, informs me that the figures are incorrect, and that the amount of land in this grant according to the Official Deed is 850,000 acres.

The emigrant possessed of some means will always do better in Oregon as everywhere else by investing them in land already under cultivation, than by purchasing wild lands, provided he is careful not to pay too high a price, and to obtain a good title; for he will thus make his labour at once productive, and avoid the loss of time and hardship incident to a new settlement. The greater number of immigrants, however, cannot be expected to be in a position to take the more advantageous course, but will have to avail themselves of the openings for settlement on Government railroad or waggon-road lands. To them the fact is of consequence, that the mildness of the climate greatly lessens the discomforts of the first years of the life of new settlers, and that the legitimate rewards of the husbandman's toil are nowhere more certain to be reaped than in Oregon.

New-comers often find it to their advantage to rent well-improved farms for a year or two. This practice enables them to become familiar with the country before settling permanently, and protects them from the mistakes incidental to hasty purchases. The usual rates of rent are: one-half of the crop to the owner, if he furnishes, besides the farm, seed, teams, &c.; and one-third of the crop, if only the land and the permanent improvements thereon are furnished.

LABOUR OPENINGS.

The labour market is influenced in Oregon as in other parts of the world by the seasons. During the rainy season, the chances for employment are less good than when the condition of the weather is more favourable to out-door pursuits, but common labourers will be sure to find remunerative employment during the greater part of the year. The opening for experienced farm-hands is

especially good. The usual wages for this class are from twenty-five to thirty dollars a month and board and lodging. The scale of wages for mechanics ranges from three dollars and a half to five dollars. Owing to the newness of the country, the opening for highly-skilled artisans is not so good as in the older States. Good domestic servants are in constant demand, and find ready employment at as h i h wages as in California; viz. twenty to thirty dollars a month. All wage-contracts are reckoned in gold.

RULING PRICES.

Taken as a whole, the cost of living is less in Oregon than in the Atlantic States, and no greater than in California. Some important wares are held higher here than east of the Rocky Mountains: but all domestic products can be had at low prices, notwithstanding the higher rates of wages.

For the past two years, wheat in bulk at Portland has averaged from 80 cents to $1.20. The average value for the last seven years of wheat over the entire area of the State, as given in the United States returns, is 86.1 cents per bushel; oats, 50 cents; potatoes, 50 to 75 cents; apples, 50 cents; maize, $1; flax-seed, $2; onions, $1.50 per bushel. Best quality of flour, $4.25 to $4.50 per barrel.

Good farm-horses can be had for $100 each; oxen, $125 per yoke; good average milch cows, 25; sheep, $3 per head; wool, common graded, 35 cents per pound.

Beef on the hoof is worth 5 to 6 cents per pound; butchered beef, 10 to 12 cents; choice cuts, 18 to 25 cents; mutton, 12 to 15; veal, 12 to 20; pork, 12 to 15 cents per pound; chickens per dozen, $5; tame ducks per pair, $1.50; geese per pair, $3; turkeys per pair,

$3; wild ducks per pair, 62 to 75 cents; wild geese, per pair, $1.50; pheasants per pair, 62 cents; grouse per pair, 75 cents; venison, 10 to 12 cents per pound. Butter, best dairy, 35 to 40; ordinary, 25 to 30; cooking, 20 cents per pound; eggs, 20 to 30 cents per dozen.

The average price of stock in Oregon for 1876 is given in the United States returns thus:—

	Under 1 year old.	Between 1 and 2 years.	Between 2 and 3 years.	Over 3 years.
Horses	19	27·50	39·28	60·43
Mules	18·50	25·40	36	62
Cattle	5·75	8·14	13·07	19·28
		Over 1 year.		
Sheep	1·66	2·18	..	..
Hogs	3·10	6·03	..	..

Milch cows average $21.75.

In the country towns and the country proper, lower prices rule.

The following list of prices gives the cost of groceries at Portland in January, 1877:—

CHEESE.

Ankeny's, per lb.	20 to 25 cents.
California „	20 „
Eastern „	25 „
Swiss „	45 „ 50 „

CANNED GOODS.

Oysters, 2-lb. tins	33 to 37½ cents.
„ 1-lb. „	25 „
Corn, 2-lb. „	33 „ 37 „
Peaches, 2½-lb. „	45 „ 50 „
„ 2-lb. „	37½ „
Table Fruits, 2-lb. tins	33 „ 37 „
Tomatoes, 2½-lb. „	75 „

String Beans, 2-lb. tins	33 to 37 cents.
Asparagus	50 „
Mushrooms	50 „ 62 „
Sardines	25 „ 37½ „
Jellies	50 „

Coal Oil.

Devoe's, per gal.	40 to 50 cents.
Other Brands	37 „

Candles.

Grant's, per lb.	25 cents.
Common „	20 „
Paraffin „	45 to 50 „

Coffee.

O. G. Java, per lb.	33 to 35 cents.
Costa Rica „	27 „
Guatemala „	25 „
Prepared „	33 „ 37 „
Mocha „	45 „ 50 „

Fish.

Extra Cod, per lb.	10 to 12½ cents.
Extra Eastern Cod, per lb.	12½ „ 15 „
Salmon, per lb.	8 „ 10 „
„ Bellies, per kit	$3 to $3 50 „
Mackerel, No. 1, per kit	3 50 „
„ Mess	4 50 „

Dried Fruits.

Apples, per lb.	8 to 10 cents.
Peaches „	12½ „ 16½ „
Prunes, pitted, per lb.	25 „
„	18 „ 20 „
Raisins	25 „
„ in qrs., per box	$1 37c. to $1 50 „
„ in eighths, per box	1 00 „
Currants, per lb.	20 to 25 „
Citron	50 „ 62½ „

Provisions.

Bacon, per lb.	15 to 17 cents.
Hams, Eastern, per lb.	18 „ 20 „
„ Oregon „	18 „ 20 „
Shoulders	12½ „ 15 „
Lard	16½ „ 18 „

Salt.

Dairy, per 50-lb. sack	$1 to $1 12 cents.
Coarse „	50 to 62½ „
Table, per package	25 „ 37½ „

Rice.

China, per lb.	8 to 10 cents.
Carolina „	12½ „ 15 „

Saleratus.

Babbitt's, per lb.	15 to 20 cents.
Donnelly's „	12½ „

Sauces.

Lea and Perrin's, per bottle ..	50 to 75 cents.
Imperial „ ..	62½ „
Walnut Catsup „ ..	50 „
Tomato „ „ ..	25 „ 37½ „
Mushroom „ „ ..	65 „

Spices.

Cloves, whole, per lb.	75 cents.
Nutmegs, per oz.	12½ to 15 „
Durham Mustard, per lb.	75 „ 85 „
Assorted Spices, per bottle ..	20 „ 25 „

Soaps.

Standard Company's C O, per box	$1 37c., to $1 50 cents.
M. and Van Hagen's, per box ..	2 00 „
Irving's Pale „ ..	1 50 „

Starch.

Oswego, per 6-lb. box	$1 00 cents.
„ per lb.	20 „
Corn Starch, per lb.	18 to 20 „
Glenfield „	20 „ 25 „

Sirups.

Extra Golden, in kegs, per gal.	80 to 85 cents.
„ per gal.	85 „ 90 „

Sugar.

Crushed, per lb.	15 to 16 cents.
Pulverised „	15 „ 16 „
Golden C „	13½ „ 15 „
Island „	10 „ 12½ „

Yeast Powder.

Preston and Merrill's, per can ..	20 to 25 cents.
Rumford's, per can	18 „ 20 „
Donnelly's „	18 „ 20 „

Teas.

Japan, natural leaf, per lb. ..	50c. to $1
„ fancy boxes	75 to 90 cents.
Gunpowder	$1 to $1 75 „

Nuts.

Walnuts, per lb.	20 to 25 cents.
Almonds „	37 „ 50 „
Hickory „	20 „ 25 „
Filberts „	30 „ 37 „
Pecans „	30 „ 37 „

GOVERNMENT—LAWS—TAXATION.

The constitution of the State provides as follows:—

No law shall, in any case whatever, control the free exercise and enjoyment of religious opinions, or interfere with the rights of conscience.

No religious test shall be required as a qualification for any office of trust or profit.

No money shall be drawn from the treasury for the benefit of any religious or theological institution, nor shall any money be appropriated for the payment of any religious services in either house of the legislative assembly.

No person shall be rendered incompetent as a witness or juror in consequence of his opinions on matters of religion, nor be questioned in any court of justice touching his religious belief, to affect the weight of his testimony.

The mode of administering an oath or affirmation shall be such as may be most consistent with, and binding upon, the conscience of the person to whom such oath or affirmation may be administered.

No law shall be passed restraining the free expression of opinion, or restraining the right to speak, write, or print, freely on any subject whatever; but every person shall be responsible for the abuse of this right.

No law shall violate the rights of the people to be secure in their persons, houses, papers, and effects, against unreasonable search or seizure; and no warrant shall issue but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the person or thing to be seized.

No court shall be secret, but justice shall be administered openly and without purchase, completely and without delay; and every man shall have remedy by due course of law for injury done him in person, property, or reputation.

In all criminal prosecutions, the accused shall have the right to public trial by an impartial jury, in the county in which the offence shall have been committed; to be heard by himself and counsel; to demand the nature and cause of the accusation against him, and to have a copy thereof; to meet the witnesses face to face, and to have compulsory process for obtaining witnesses in his favour.

No person shall be put in jeopardy twice for the same offence, nor be compelled in any criminal prosecution to testify against himself.

No person arrested or confined in jail shall be treated with unnecessary rigour.

Offences, except murder and treason, shall be bailable by sufficient securities. Murder or treason shall not be bailable when the proof is evident or the presumption strong.

Laws for the punishment of crime shall be founded on the principles of reformation, and not of vindictive justice.

Excessive bail shall not be required, nor excessive fines imposed. Cruel and unusual punishments shall not be inflicted, but all penalties shall be proportioned to the offence. In all criminal cases whatever, the jury shall have the right to determine the law and the facts under the direction of the court, as to the law and the right of new trial, as in civil cases.

In all civil cases, the right of trial by jury shall remain inviolate.

Private property shall not be taken for public use, nor the particular service of any man be demanded without just compensation; nor, except in the case of the State, without such compensation first assessed and tendered.

There shall be no imprisonment for debt except in case of fraud or absconding debtors.

No law shall be passed granting to any citizen, or class of citizens, privileges or immunities, which, upon the same terms, shall not equally belong to all citizens.

No *ex post facto* law, or law impairing the obligations of contracts, shall ever be passed; nor shall any law be passed, the taking effect of which shall be made to depend upon any authority except as provided in the Constitution.

The operation of the laws shall never be suspended except by the authority of the legislative assembly.

The privilege of habeas corpus shall not be suspended, unless, in case of rebellion or invasion, the public safety require it.

No conviction shall work corruption of blood or forfeiture of estate.

No law shall be passed restraining any of the inhabitants of the State from assembling together in a peaceable manner to consult for their common good; nor from instructing their representatives; nor from applying to the legislature for redress or grievances.

The people shall have the right to bear arms for the defence of themselves and the State, but the military shall be kept in strict subordination to the civil power.

No soldier shall, in time of peace, be quartered in any house without the consent of the owner, nor in time of war except in manner prescribed by law.

No law shall be passed granting any title of nobility, or conferring hereditary distinctions.

No law shall be passed prohibiting emigration from the State.

Foreigners who are or may hereafter become residents of this State, shall enjoy the same rights, in respect to the possession, enjoyment, and descent of property, as native-born citizens.

The provisions of the State Constitution regarding suffrage are:—

"All elections shall be free and equal.

"In all elections not otherwise provided for by this Constitution, every male citizen of the United States, of the age of twenty-one years and upwards, who shall have resided in the State during the six months immediately preceding such election, and every male of foreign birth, of the age of twenty-one years and upwards, who shall have resided in this State during the six months immediately preceding such election, and shall have declared his intention to become a citizen of the United States one year preceding such election, conformably to the laws of the United States on the subject of naturalization shall be entitled to vote at all elections authorized by law."

The executive branch of the State government consists of a governor, who exercises the chief executive power; a secretary of state, who performs also the duties of State auditor of public accounts; and a State treasurer,—all of which officers are elected for terms of four years; but no person is eligible to any of these three offices for more than eight in any period of twelve years. In case of a vacancy in the office of governor, the duties of it devolve upon the Secretary of State; and in case of a simultaneous vacancy in the office of the latter, upon the presiding officer of the upper branch of the State legislature. The legislative branch consists of a Senate and a House

of Representatives. The Constitution provides that the former shall not at any time exceed thirty, and the latter not sixty, in number. The legislature meets biennially, on the second Monday of September.

Justice is administered in the State by a supreme court, circuit and county courts, municipal courts, and justices of the peace. All of the judicial officers are elected by the people.

Under the State Constitution, the legislature is required, whenever the expenses of the State of any fiscal year exceed its income, to provide for levying a tax for the following fiscal year, sufficient, with other sources of income, to pay the deficiency, as well as the ordinary current expenditures.

The Constitution absolutely forbids the establishment by legislative act of any "bank or banking company or moneyed institution whatever," as well as the issue of any bank-notes, or other promises to pay, intended to circulate as money, in any manner and for any purpose. But associations for banking purposes, excepting such of issue, may be formed under the general law regarding corporations.

The Constitution, moreover, forbids the State to subscribe to the stock of, or to take any pecuniary interest whatever in, any company, association, or corporation. As will be seen by the following provisions, it guards also very strictly against the contraction of any considerable State debt, and obligations by counties and towns and municipal corporations in the interest of private corporations:—

The legislative assembly shall not loan the credit of the State, nor *in any manner create any debts or liabilities which shall singly or in the aggregate, with previous debts or liabilities, exceed the sum of fifty thousand dollars*, except in case of war, or to repel invasion, or suppress insurrection; and every contract of indebtedness entered into or assumed by or on behalf of the State

when all its liabilities and debts amount to said sum, shall be void and of no effect.

The State shall never assume the debts of any county, town, or other corporation whatever, unless such debts shall have been created to repel invasion, suppress insurrection, or defend the State in war.

No county, city, town, or other municipal corporation, by vote of its citizens or otherwise, shall become a stockholder in any joint company, corporation, or association whatever, or raise money for or loan its credit to or in aid of any company, corporation, or association.

No county shall create any debts or liabilities which shall, singly or in the aggregate, exceed five thousand dollars.

By virtue of a statute-law, any non-resident citizen of the United States, or alien,—

May acquire and hold lands, or any right thereto or interest therein, by purchase, devise, or descent; and he may convey, mortgage, and devise the same; and, if he shall die intestate, the same shall descend to his heirs; and in all cases such lands shall be held, conveyed, mortgaged, or devised, or shall descend in like manner and with like effect, as if such alien were a native or citizen of this State.

Under the laws of the State, every person of twenty-one years of age and upwards, of sound mind, may, by last will and testament, devise all his estate, real and personal, saving the dower of widows; and every person of eighteen years of age, of sound mind, may, by last will, dispose of all his personal property. A married woman may will property held in her own right.

A widow is entitled to dower, or the use during her natural life of one-third of all the lands of which her husband died possessed; but a jointure may take the place of dower if assented to by her.

The State Constitution provides that married women may hold, in their own right, property of every description, possessed at their marriage, or acquired afterward

by gift, devise, or inheritance, which property is exempt from liability for the debts or contracts of the husband. To secure this exemption, an affidavit, setting forth the separate property of a wife, must be filed for registry with the clerk of the county. The same exemption is secured by statute to all real or personal property acquired by married women through their own labour.

The statute relating to exemptions of property from seizure for debt provides as follows:—

The following property shall be exempt from execution, if selected and reserved by the judgment debtor or his agent at the time of the levy, or as soon thereafter before the sale thereof as the same shall be known to him, and not otherwise:—

1. Books, pictures, and musical instruments, owned by any person to the value of seventy-five dollars.

2. Necessary wearing apparel, owned by any person to the value of a hundred dollars; and if such person be a householder, for each member of his family to the value of fifty dollars.

3. The tools, implements, apparatus, team, vehicle, harness, or library, necessary to enable any person to carry on the trade, occupation, or profession, by which such person habitually earns his living, to the value of four hundred dollars. Also sufficient quantity of food to support such team, if any, for sixty days. The word "team," in this subdivision, shall not be considered to include more than one yoke of oxen, or a pair of horses or mules, as the case may be.

4. The following property, if owned by a householder and in actual use, or kept for use, by or for his family, or when being removed from one habitation to another, or a change of residence: ten sheep with one year's fleece, or the yarn or cloth manufactured therefrom; two cows and five swine; household goods, furniture, and utensils, to the value of three hundred dollars. Also food sufficient to support such animals, if any, for three months; provisions actually provided for family use, and necessary for the support of such householder and family for six months.

5. The seat or pew occupied by a householder or his family in a place of worship.

The earnings of a judgment debtor for personal services, at any time within thirty days next preceding the judgment against a garnishee, shall not be included in such judgment, when it shall be made to appear, by the affidavit of the judgment debtor or otherwise, that such earnings are necessary for the use of a family supported wholly or partly by his labour.

Taxation.—According to the national census of 1870, the total value of real and personal property, assessed in that year for purposes of taxation in Oregon, was $31,798,510; while the entire value of both classes of property was $51,558,932. It appears from these figures, that, although the statute requires assessment at the full cash value, in practice, taxes are levied on about only sixty per cent. of it. Complaints of unjust assessment are heard before boards of equalization. According to the State assessment of 1875, the total value of real and personal property amounted to $41,436,086.

In 1874 the State taxes amounted to five and a half mills, that is to say, 5½ cents, on every 10 dollars; the county taxes ranged from five to twelve mills; and school taxes averaged three mills. In addition to these, a poll-tax of one dollar is levied annually on every inhabitant between twenty-one and fifty years of age.

In the city of Salem, the capital of the State, taken as an example by Governor Grover in his late Biennial Message, the present total rate of taxation amounts to three and a half per cent. on all property valuation.

State Tax	5	mills on a dollar.
Military Tax	1½	„ „
General School Tax	3	„ „
Local School Tax	3	„ „
School Building Tax ..	1½	„ „
Road Tax equal to	2	„ „
City Tax	9	„ „
Total	35½	„ „

The personal property of infirm and indigent persons is exempted from taxation, as also the personal property of every householder to the amount of $300.

The total liabilities of the State amounted in 1876 to $607,917,41.

EDUCATIONAL FACILITIES.

According to the statistics of education, taken in connection with the national census of 1870, there were in Oregon, in that year, 637 public and private schools, taught by 484 male and 142 female teachers, and attended by 16,753 male and 15,840 female, or a total of 32,593 pupils. The number of schools includes 3 establishments under the name of universities, 6 colleges, 10 academies; and 594 public schools—comprising 4 high, 31 graded, and 559 common schools. These were supported in the year 1873–74 at an outlay of $215,107. The value of the public-school property was $332,764 in 1873–74, and $26,608 were expended for new school-buildings in that year. Of the three so-called universities, one is a State institution opened in 1876 at Eugene City; another, the "Willamete University," situated at Salem, belongs to the Methodist-Episcopal persuasion, and the third, situate at the town of Forest-Grove, belongs to the Congregationalists. The universities are really but collegiate institutions. The colleges were founded and are carried on under the auspices of the Episcopal, Presbyterian, Baptist, Catholic, and Campbellite persuasions, with the exception of the Agricultural College, which is a State institution.

The means for sustaining the public educational institutions are provided in part from special funds, but in the main from taxation. The special funds are principally derived from the sale of lands granted to the State by the

United States Government for educational purposes. For the public schools the grant amounted to 500,000 acres; for the endowment of a State university, 66,080 acres; and for the Agricultural College, 90,000 acres. The Governor, Secretary, and Treasurer of the State, are, by the State Constitution, made a board for the sale of the lands belonging to these several grants, and the investment of the funds derived from them. The first-mentioned grant has already yielded, up to September, 1876, $505,331. It is expected that enough will be eventually realized from it to meet the larger part of the expenditure of the State for public schools. From the university grant, not far from $100,000 has been realized up to this time.

The State also supports establishments for the education of blind and mute persons.

It is thus seen that Oregon possesses very good educational advantages.

WHO SHOULD GO TO OREGON?

Some advice on this point has already been given indirectly, under "Labour Openings;" but the subject is so important as to call for additional suggestions regarding it.

The first requisite to a person proposing to emigrate to a new country, with a view to improving his condition in life, is good health. Although the climate of Oregon is so favourable as to insure exemption from diseases prevailing in other States, and promises relief in certain bodily troubles, the chances are that immigration will prove a mistake in the case of confirmed invalids compelled to work for a living. For nowhere more than in a strange land, among strangers, is there a need of the buoyancy of spirit enabling one to bear up under dis-

appointment and hardships, which, as a rule, belongs only to a sound body.

Persons beyond the active years of life, and without that adaptability to circumstances belonging to them, will also run considerable risk in emigrating, unless possessed of means. To such, old communities usually afford better opportunities for self-support than new ones, where the struggle for success in life calls for more energy than pertains to mature age. Single men are obviously much safer in taking their chances than persons who have to provide for others. Heads of families especially, even if strong in body and not too advanced in life, should carefully weigh the possible consequences of emigration, both to themselves and to those whose future will be fashioned by their own.

No one should think of emigrating to Oregon without sufficient means for self-support for at least a short time after reaching there; for suitable employment immediately after arrival cannot always be relied on, and there is nothing more discouraging to the new-comer than to become a subject of public or private charity. This caution applies particularly to heads of families, who would be cruelly derelict in their duty to expose those depending on them to the risk of destitution on arrival. Families who contemplate settling on lands will require, after providing for all travelling expenses, about five hundred dollars with which to meet the expenses of putting up a house, for live-stock, seed, farming utensils, provisions, &c. For renting farms, and working them on shares, less ready money will suffice.

Generally speaking, persons accustomed to ordinary and mechanical labour, and who unite frugal habits with persevering industry, will run the least risk in emigrating to Oregon; but individuals unwilling to work, or accustomed to live by their wits, are not wanted in Oregon

any more than elsewhere. Idlers will only go from bad to worse; and adventurers will not prosper there.

Success can also be promised to energetic farmers. However modest their beginning, they may be sure of finding themselves in possession of a competency after a few laborious years. But there is not only a fine opening for small farmers in Oregon; nowhere will stock-raising and ordinary farming on a large scale bring more satisfactory results.

In Oregon there is no more lack than in other parts of the United States of lawyers, doctors, clergymen, and the followers of other learned professions; and persons belonging to them will find it difficult to make their way to a lucrative practice. But, even in these callings, success may be achieved by capable men, prepared for years of patience and self-denial.

In mercantile pursuits the opening is good for men of enterprise and capital; but the chances for mere clerks are not very good.

WHEN AND HOW TO GO TO OREGON.

Spring is by all means the best season; next to this, summer; and next, autumn; and mid-winter the worst time for arrival in Oregon. In the spring, the chances of finding employment are better than at any other time of the year; and the purchasers or renters of land can immediately proceed with its cultivation.

Emigrants from Eastern Canada and the Atlantic States have the choice between two routes to Oregon. One is by the steamers of the Pacific Mail Steamship Company from New York to Colon (Aspinwall), thence by rail to Panama, thence by steamer to San Francisco, and thence by steamer of the Oregon Steamship Company to Portland, Oregon. The other is by rail all the way to

San Francisco over the Pacific railways, and thence to Portland, Oregon, as on the former route. The Panama route is cheaper, especially for families, cooked food being provided by the steamship companies; but the journey from New York to San Francisco over it takes about a week longer than by rail. The overland route is preferable for emigrants from the Middle, Western, and South-western States.

Passage tickets at the present time, by steamer from New York to San Francisco, are, cabin, $100; steerage, $50.

Those who go overland will, in every case, save money by purchasing through tickets. Railroad fares of the different classes to Portland, Oregon, from the different Atlantic seaboard and interior cities, are constantly changing. Emigrant through tickets at the present time, are, to Portland, Oregon:—

	$	c.
From Austin, Tex.	387	35
„ Baltimore	77	00
„ Boston	78	00
„ Buffalo or Niagara Falls	73	00
„ Chicago	67	50
„ Dallas, Tex.	81	90
„ Dennison, Tex.	80	20
„ Galveston, „	89	05
„ Houlston, „	87	80
„ Montreal, Can.	77	00
„ Nashville, Tenn.	76	50
„ New Orleans	80	00
„ New York	77	00
„ Omaha, Neb.	57	00
„ Philadelphia	75	50
„ Pittsburg, Penn.	72	00
„ Portland, Me.	77	00
„ Quebec, Can.	77	00
„ Quincy, Ill.	67	50
„ St. Louis	67	50
„ St. Paul, Minn.	2	25

The stage-coach route from Northern California to Oregon can be recommended to persons of means. Fare from Sacramento to Redding, the northernmost railroad station in California (180 miles), $8; from Redding to Portland, 480 miles (280 by stage, and 200 *viâ* Oregon and California Railroad), $40.

Emigrants from Europe can proceed to Portland, Oregon, either by steamer to New York, and thence *viâ* Isthmus of Panama; or by rail overland; or direct by English or German steamers to Colon, and thence to San Francisco and Portland, as already stated. The fare by the last-mentioned route is $92.50, gold.

Distances from New York to Portland, Oregon :—

	miles.
Viâ Omaha and San Francisco	3992
„ „ Sacramento, and Redding ..	3799
„ St. Louis, Denver, and San Francisco	4150
„ „ „ Sacramento, and Redding	3957

The following extracts from the Report of the Oregon State Commissioners of Immigration for 1876 show the facilities given by the Government of the State to arriving settlers and the present amount of immigration :—

"The Board has also at Astoria a paid distributor of cards or circulars from this Board, whose duty consists in delivering, on the arrival of each San Francisco steamer at Astoria, cards to immigrants on board, stating the objects of your Commission, and earnestly pressing such immigrants, on their arrival at Portland, to call at the immigration rooms there, and receive all necessary information and guidance to enable them to settle in the various portions of the State. The Board of Trade of Portland for upwards of a year tendered their rooms for the use of immigrants, rent free, and thereafter the Secretary (Mr. Reid) has, during the last six months, also

tendered to the Immigration Board, rent free, a reception room for the use of immigrants and Assistant Secretary.

"Immigrants come *daily* to the rooms, where they are received by the Assistant Secretary and Secretary, and frequently by the Commissoners. All information is afforded them, and their various wants, so far as in the Board's power to supply, are attended to. Those who arrive in search of labour, receive whatever employment is open in the Board's Labour Record book. Direct orders for help are received, and those not so provided are directed to such localities as offer best inducements, and furnished with letters to enable them to secure employment. This Labour Record is of much importance to the Board, as it gives the immigrant courage, relieves distress, and prevents useless waste of his means while in search of employment. If taken more advantage of by the citizens of the State, much more good would follow to the immigrant and those employers of labour, farmers and such like. Immigrants in search of lands are handed lists of private lands for sale (which lists contain answers to the Board's advertisements in most of the Oregon newspapers for descriptions of lands for sale, for use of immigrants). The Board does not undertake the sale of such lands, however, leaving the owner and purchaser to complete whatever bargains they may mutually agree upon, and the immigrant to choose which of the farms he prefers. All information is given of State and Government lands, and where located, all over the State.

"If, as frequently happens, complaints are made by immigrants of being imposed on by sharpers, these complaints are investigated, and the proper authorities communicated with. Occasionally the Board has had in court to watch the interests of immigrants of whom an advantage was being taken by unprincipled persons.

"The Board some time ago concluded contracts with

one of the Atlantic steamship companies to carry emigrants to Oregon from Europe to New York *at half the usual rates.* This contract has been largely taken advantage of, and will not expire till the 5th of May, 1879. Arrangements were made, and are still in force, by which the Oregon Steamship Company carry all persons, certified by the Oregon Commissioners or one of the Foreign Commissioners of Emigration as bona fide emigrants to Portland, at modified rates of fare in the steerage, while the California Railroad Company agreed to carry all immigrants when they first arrive in Portland to their destination "up country" at half fares, at which rates, in 1875, they carried 3900 persons, and in 1876, to the 7th of September, 2100 persons. These benefits are largely taken advantage of, and persons lately from the East and Europe frequently, in consequence, receive from the Board such certificates to bring their friends here.

"Circulars were forwarded by one of the Multnomah County Granges to every Grange in Oregon, asking answers as to the advantages, resources, products, and prices in every locality, from which answers your Board selected one in every county and printed for each county the information so given by such County Grange. 50,000 circulars of this nature were printed for circulation.

"It is difficult to procure an accurate statement of the arrivals in and departures from our State, so as to ascertain definitely our increase of population. But judging from the most reliable data we have obtained, we believe that during the last twenty months 11,213 immigrants have arrived in this State. The large majority of immigrants come from the Western and North-western States, a good number from Europe and New England States, and from New Zealand; from which latter colony your Board procured the names of 5000 persons, principally sheep and agricultural farmers, to

whom were mailed 5000 copies of a printed circular describing Eastern Oregon as a sheep country, and Western Oregon as a grain-growing section. Already many immigrants have arrived from New Zealand, and judging from the letters we receive and the opinions expressed by our Immigration Commissioners in that colony, a larger number will follow next year."

GENERAL REMARKS.

In conclusion, I would say that no visitor to Oregon who had any opportunity of observing the condition of the people would fail to be impressed by their great general prosperity. The land yields such an abundant return for so little labour that those who hold land have little to do except at seed time and harvest. During the tour of our party in the country, which took place just before harvest was coming on, we met with a constant succession of parties, whole families or groups of young men who were out in waggons, camping out and enjoying themselves in the mountains or at the sea side, and taking a week or a fortnight's holiday. There were three hundred people taking sea air at Newport, on Yaquina Bay, during our visit to this port, and the keeper of the toll-gate on the Willamette Valley and Cascade Mountains military road told me that 400 waggons of pleasure parties passed the gate on tours into the mountains every year on this road alone. No one in Oregon seems to be hard worked, but everyone appears able to make a comfortable living with comparative ease.

No doubt this condition is to a great extent due to the fact that a large proportion of the Oregonians entered the country early and obtained large grants of the best land, and are now with their families reaping the reward of their foresight. Easily cultivatible land is not

now to be had on such easy terms as formerly; indeed, nothing astonishes the visitor so much as the extent to which all pieces of flat, prairie, and bottom land have been taken up, even in comparatively remote districts.

The Oregonians constantly ask visitors what they think of their wild country, but in fact nothing surprised me more in the country along the routes followed by our party than the comparative absence of wildness in Oregon, as contrasted with other new countries. The mark of the hand of man was to be seen everywhere, and in all our journeys there was no occasion for us to have slept without a roof over our heads, had we not preferred to sleep out. The Oregonians camp out on their pleasure excursions with their waggons apparently more as a matter of old habit, many having crossed the plains from the east in this fashion, than from necessity.

The land is no doubt almost everywhere farmed in a very superficial manner, or extremely badly, if the operations be judged by our English standard. Manuring is almost unheard of, and there is no rotation of crops. The utmost done for the land as a rule is to give it an occasional summer fallow to kill off the weeds and couch. The mildness of its winters renders Oregon preferable to the settler to the Eastern States on the same latitude, and we were astonished at the number of settlers which we met with in the State who had moved west, driven off the eastern plains by the cold winters. We could not fail to be struck with the superiority of Oregon over California in possessing a constant rainfall, seeing that California was suffering at the time of our visit from a drought of more than a year's duration, so that the cornlands there in many places looked like a parched and barren desert. Numbers of emigrants were seen moving up along the road from the south to Oregon in search of rain.

Cattle-farming is a paying business in Oregon, and a man who holds a good patch of hay land, to give him a winter stand by, in the Eastern districts, or Coast Ranges, can as yet find ample range for his cattle, over unappropriated land, with no cost except that of the small State-tax on the value of the herd.

Further, the ample water power in Oregon flowing from the Cascade Mountains and their foot hills must lead eventually to the great development of manufacturing industries. A new flax mill, to make twine for the nets used in the salmon fisheries, was being opened at Albany at the time of our visit.

The day in which the Indians could harm the settler in Oregon is now past. The few remaining natives are entirely under control on Government reservations. There are only about 2000 in all Western Oregon.

Oregon has an enormous advantage over the States of the Eastern plains, in being a beautiful country, with a constantly diversified scenery. The views from the Coast Ranges across the wide fertile Willamette Valley, with its belts of forest following the course of the rivers, and the forest-clad Cascade Range stretching itself in the back ground, topped by fine snow-clad peaks, are magnificent.

A finer field for the sportsman than Oregon does not exist.

There seems to be no reason why Oregon, with her exceptional climate and advantages, and present promise, with the advancing commerce of the Pacific, its coast and islands, and that of China and Japan before her, as well as her trade round the Horn, and prospect of direct railway communication before very long with the East, should not develop to as great wealth and prosperity as almost any of the Eastern States of the Union.

LIST OF BOOKS AND PAMPHLETS RELATING TO OREGON.

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